

Item No.: 1778043

Type: MSTB 2,5/ 8-STF-5,08

PCB connector, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 8 | • Nominal current | 12 A |
| • Conductor cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (6021) | • Connection direction | 0 ° |
| • Pitch | 5.08 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
- ✓ Screwable flange for superior mechanical stability
- ✓ Allows connection of two conductors



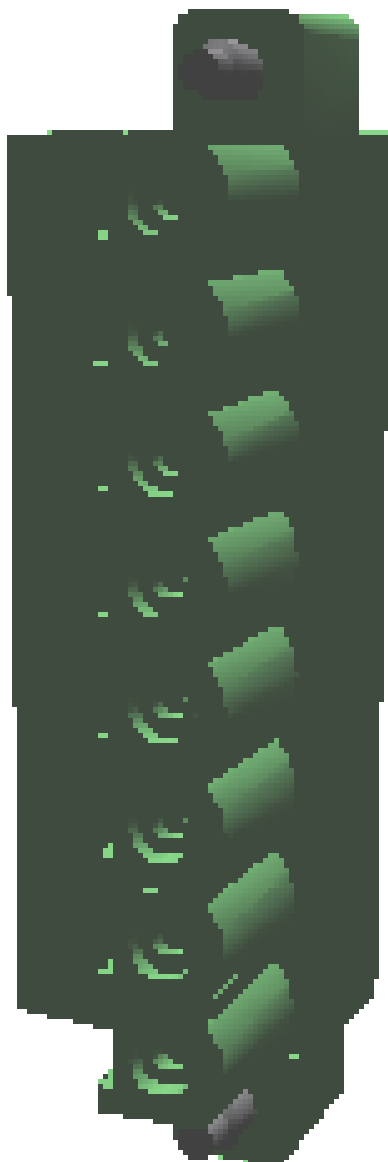
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1778043

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1778043 MSTB 2,5/ 8-STF-5,08

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



1778043 MSTB 2,5/ 8-STF-5,08**5 General Technical Data****5.1 item properties**

Item no.	1778043
Type	MSTB 2,5/ 8-STF-5,08
Product line	COMBICON Connectors M
Connector system	CLASSIC COMBICON
Product type	PCB connector
Type of contact	Female connector
Range of articles	MSTB 2,5/...-STF
Pitch	5.08 mm
Number of positions	8
Number of rows	1
Number of connections	8
Number of potentials	8
Connection method	Screw connection with tension sleeve
Screw thread	M3
Drive form screw head	Slotted (L)
Connection direction of the conductor to plug-in direction	0 °
Type	Standard

1778043 MSTB 2,5/ 8-STF-5,08**6 Mounting****6.1 Flange mounting**

Type of locking	Screw locking
Mounting flange	Screw flange
Torque	0.3 Nm

1778043 MSTB 2,5/ 8-STF-5,08**7 Conductor connection****7.1 Connection capacity**

Nominal cross section	2.5 mm ²
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 2.5 mm ²
2 conductors with same cross section, solid	0.2 mm ² ... 1 mm ²
2 conductors with same cross section, stranded	0.2 mm ² ... 1.5 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² ... 1 mm ²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm ² ... 1.5 mm ²
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / 2.4 mm
Stripping length	7 mm
Tightening torque	0.5 Nm ... 0.6 Nm

7.2 Connection capacity AWG

Conductor cross section AWG	24 ... 12
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1778043 MSTB 2,5/ 8-STF-5,08**8 Material properties****8.1 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	Tin (5 - 7 µm Sn)
Surface contact area	Tin (5 - 7 µm Sn)
Surface characteristics	hot-dip tin-plated

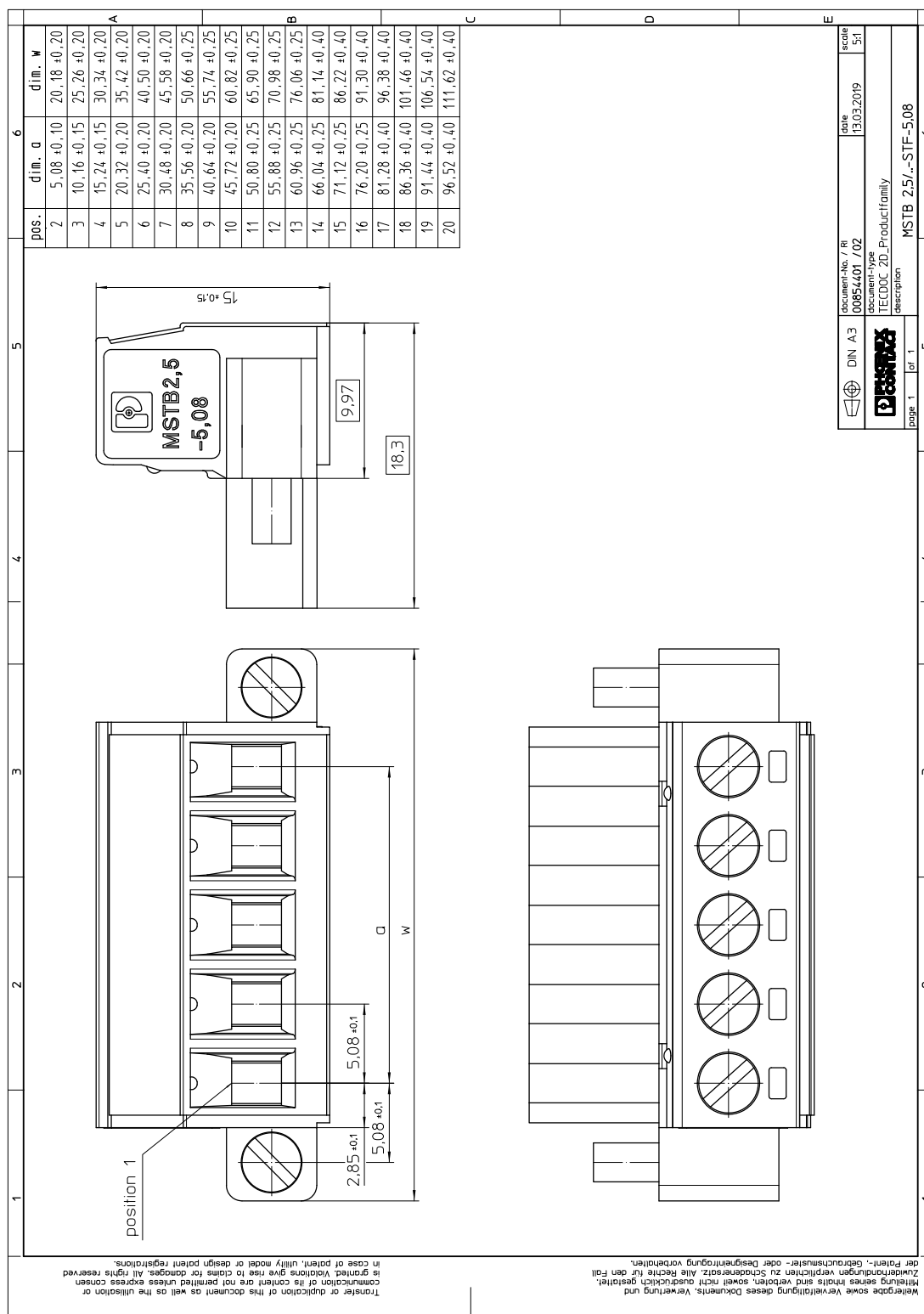
8.2 Material of plastic parts

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

1778043 MSTB 2,5/ 8-STF-5,08**9 Dimensions****9.1 Dimensions for the product**

Length	18.3 mm
Width	50.65 mm
Installed height	15 mm
Total height	15 mm

10 Series drawing



1778043 MSTB 2,5/ 8-STF-5,08

11 Product notes

11.1 General information

Notes on operation

In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

12 Packaging information

Type of packaging

packed in cardboard

Pieces per package

50

13 Application

13.1 Temperature limit values

Ambient temperature (storage/transport)

-40 °C ... 70 °C

Relative humidity (storage/transport)

30 % ... 70 %

Ambient temperature (assembly)

-5 °C ... 100 °C

Ambient temperature (operation)

-40 °C ... 100 °C (dependent on the derating curve)

1778043 MSTB 2,5/ 8-STF-5,08**14 General tests****14.1 Specification**

Specification	IEC 61984
Specification	IEC 60999-1
Brief description	Printed-circuit board connector

15 Mechanical tests**15.1 Check for damage to conductor or loosening**

Result	Test passed
Specification	IEC 60999-1:1999-11

15.2 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 / flexible / > 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 / flexible / > 50 N

15.3 Torque test

Specification	IEC 60999-1:1999-11
Result	Test passed

15.4 Visual examination

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

15.5 Dimensional test

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

15.6 Resistance of marking

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

15.7 Polarization and coding

1778043 MSTB 2,5/ 8-STF-5,08

Polarization when inserted
Requirement >20 N

Test passed

Specification

IEC 60512-13-5:2006-02

1778043 MSTB 2,5/ 8-STF-5,08**16 Insertion and withdrawal forces**

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

1778043 MSTB 2,5/ 8-STF-5,08**17 Electrical tests**

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	1.3 mΩ
Degree of pollution	2

1778043 MSTB 2,5/ 8-STF-5,08**18 Air and creepage distances**

Component	PCB connector		
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

1778043 MSTB 2,5/ 8-STF-5,08

19 Current carrying capacity/derating curves

Specification

IEC 61984:2008-10

Note

Representation based on IEC 60512-5-2:2002-02

Note

For number of positions, see diagram

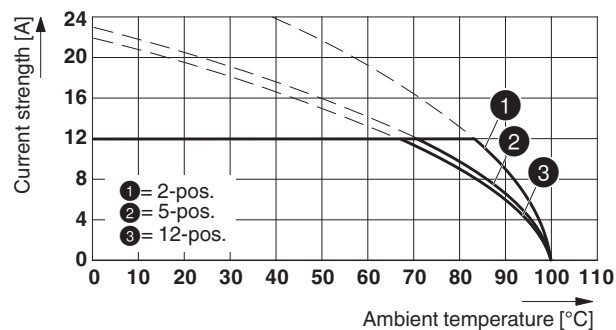
Reduction factor

0.8

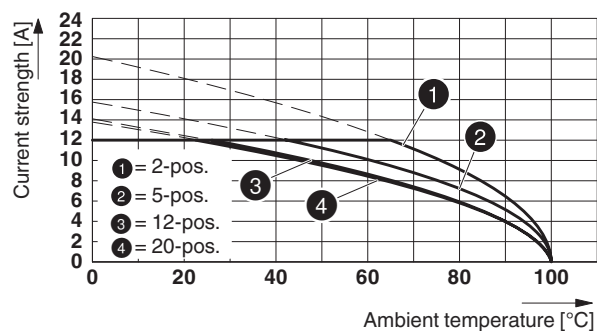
Conductor cross section

2.5 mm²

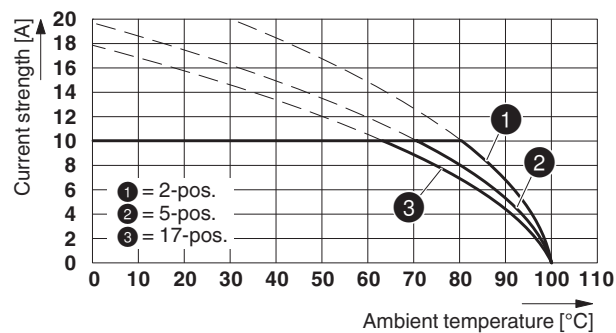
Type: MSTB 2,5/...-STF-5,08 with CC 2,5/...-GF-5,08 P26THR

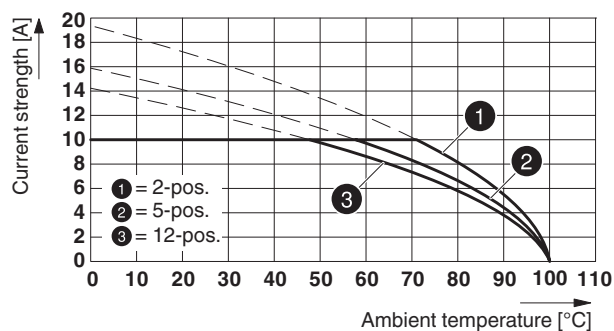
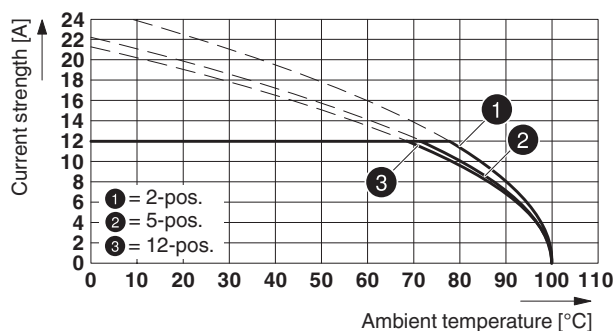
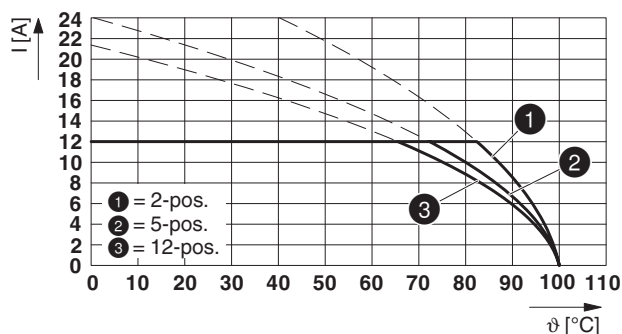


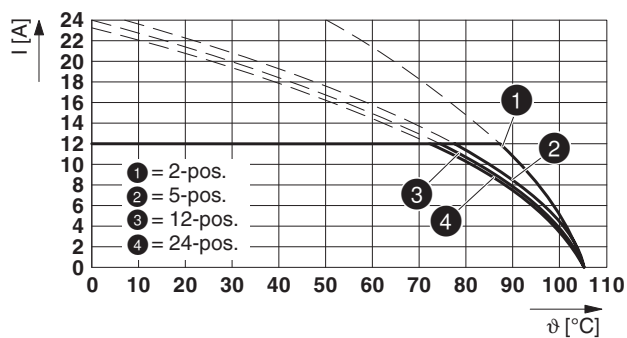
Type: MSTB 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08



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



1778043 MSTB 2,5/ 8-STF-5,08**Type: MSTB 2,5/...-STF-5,08 with MDSTBV 2,5/...-GF-5,08****Type: MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR****Type: MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR**

1778043 MSTB 2,5/ 8-STF-5,08**Type: MSTB 2,5/...-STF-5,08 with CC 2,5/...-GF-5,08-LR P...THR**

1778043 MSTB 2,5/ 8-STF-5,08**20 Environmental and durability tests****20.1 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	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

20.2 Insulation resistance

Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 MΩ

1778043 MSTB 2,5/ 8-STF-5,08**21 Type approval and special tests****21.1 Shock testing**

Specification	IEC 60068-2-27:2008-02
Result	Test passed
Pulse shape	Semi-sinusoidal
Peak acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)

22 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
Locking	no
Connection method	Screw terminal points

1778043 MSTB 2,5/ 8-STF-5,08

23 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	15 A	28 - 12	-
Usegroup D				
	300 V	10 A	28 - 12	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	0.2 - 2.5
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	15 A	30 - 12	-
Usegroup D				
	300 V	10 A	30 - 12	-
DNV GL 				
RS 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	0.2 - 2.5

1778043 MSTB 2,5/ 8-STF-5,08**24 Commercial Data**

Item no.	1778043
Type	MSTB 2,5/ 8-STF-5,08
Pieces per package	50
Net weight	14.164 g
GTIN	4017918039912
	Information that applies locally, see link on page 1

25 corresponding headers

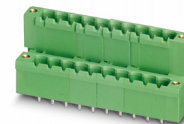
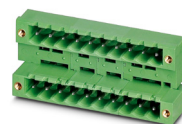
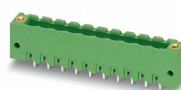
Item no.	Type
1776566	MSTB 2,5/ 8-GF-5,08
1777138	MSTBV 2,5/ 8-GF-5,08
1842429	MDSTB 2,5/ 8-GF-5,08
1845691	MDSTBV 2,5/ 8-GF-5,08
1899045	DFK-MSTBA 2,5/ 8-GF-5,08
1899346	DFK-MSTBVA 2,5/ 8-GF-5,08
1954757	CC 2,5/ 8-GF-5,08 P26THR
1954867	CC 2,5/ 8-GF-5,08 P26THRR88
1955691	CCV 2,5/ 8-GF-5,08 P26THR
1955808	CCV 2,5/ 8-GF-5,08 P26THRR88

26 Accessories

Description	Item 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
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	0803906	SK U/3,8 WH:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm	0811228	X-PEN 0,35
	1803921	KGG-MSTB 2,5/ 8
	1783779	KGS-MSTB 2,5/ 8

1778043 MSTB 2,5/ 8-STF-5,08

27 Combination tests

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

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 NContact holder in insert
Requirements >20 N**Durability tests (B)**Contact resistance R_1 1st levelContact resistance R_1 2nd level

Insertion/withdrawal cycles

Contact resistance R_2 Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ Insulation resistance
Requirements > 5 M Ω **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 $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

CC 2,5/..-GF

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.3 m Ω

25

1.4 m Ω

4.8 kV

2.21 kV

> 5 M Ω

12

2.5 mm²

12 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MSTBV 2,5/..-GF**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.5 m Ω

25

2.6 m Ω

4.8 kV

2.21 kV

> 5 M Ω

20

2.5 mm²

12 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MDSTB 2,5/..-GF**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.3 m Ω 1.6 m Ω

25

1.3 m Ω

4.8 kV

2.21 kV

> 5 M Ω

17

2.5 mm²

10 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MDSTBV 2,5/..-GF**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.5 m Ω 1.6 m Ω

25

2.5 m Ω

4.8 kV

2.21 kV

> 5 M Ω

12

2.5 mm²

10 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1778043 MSTB 2,5/ 8-STF-5,08**MSTB 2,5/...-STF**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

CCV 2,5/...-GF

IEC 61984

approx. 8 N / 6 N

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

IEC 61984

approx. 8 N / 6 N

CC 2,5/...-GF-LR

IEC 61984

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

Durability tests (B)Contact resistance R_1 1st level

1.3 mΩ

1.2 mΩ

1.2 mΩ

Contact resistance R_1 2nd level

Insertion/withdrawal cycles

25

25

25

Contact resistance R_2

1.3 mΩ

1.3 mΩ

1.3 mΩ

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 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

Thermal tests (C)

Tested number of positions

12

12

12

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²

Test current

12 A

12 A

12 A

Upper limiting temperature
Requirements < 100°C

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

Test sequence 2: heat storage

100 °C/168 h

100 °C/168 h

105 °C/168 h

Test sequence 3: noxious gas storage
(ISO 6988)0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycleRated 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

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test fingerFinger safety with IP20
test fingerFinger safety with IP20
test finger