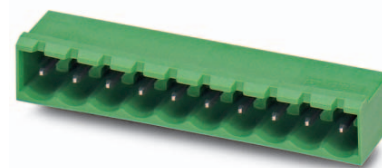


Data sheet

Order No.: 1757255

Type: MSTBA 2,5/ 3-G-5,08

Header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 3 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green | • Connection direction | 0 ° |
| • Pitch | 5.08 mm | • Type of packaging | packed in cardboard |
| • Mounting type | Wave soldering | | |

2 Your advantages

- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Well-known mounting principle allows worldwide use
- ✓ Plug-in direction parallel to the PCB
- ✓ Closed contour for optimum stability of the plug-in connection



Make sure you always use the latest documentation.

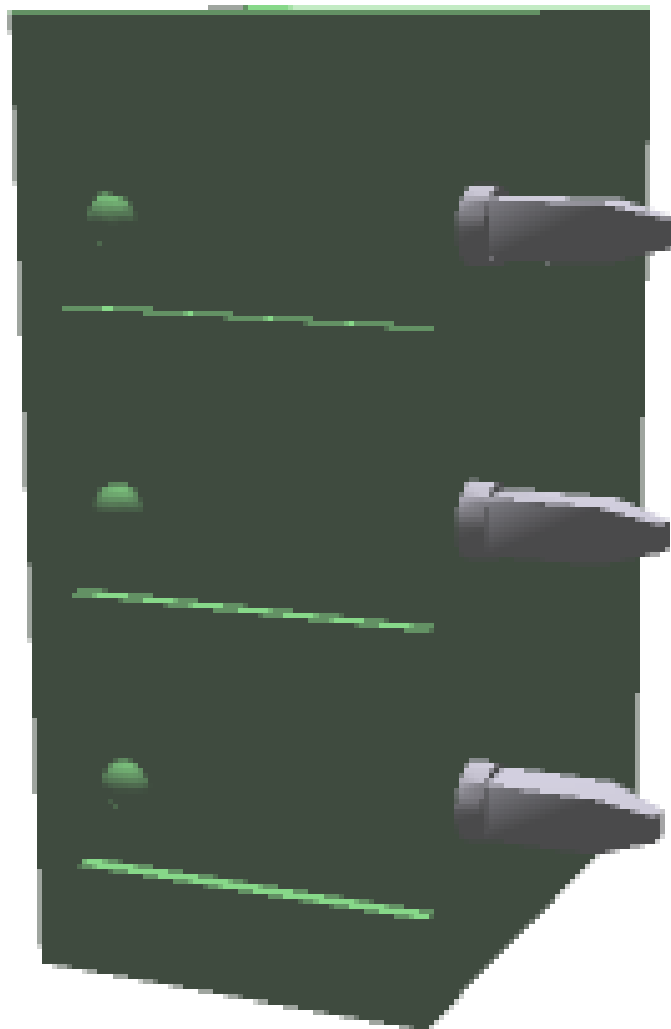
It can be downloaded at: phoenixcontact.net/product/1757255

1757255 MSTBA 2,5/ 3-G-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 Material data	4
6	Dimensions.....	4
	6.1 Dimensions for the product	4
	6.2 Dimensions for PCB design.....	4
7	Series drawing.....	5
8	Packaging information	6
9	Application.....	6
	9.1 Temperature limit values	6
10	Mechanical tests.....	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.....	11
17	corresponding plugs	11
18	Accessories.....	11
19	Combination tests.....	12

1757255 MSTBA 2,5/ 3-G-5,08

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



1757255 MSTBA 2,5/ 3-G-5,08**5 item properties**

Order No.	1757255
Type	MSTBA 2,5/ 3-G-5,08
Type of contact	Male connector
Range of articles	MSTBA 2,5/...-G
Pitch	5.08 mm
Number of positions	3
Locking	without
Mounting type	Wave soldering
Pin layout	Linear pinning

5.1 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
Surface contact area	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Soldering area surface	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Surface characteristics	Tin-plated
Insulating material data	
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**6.1 Dimensions for the product**

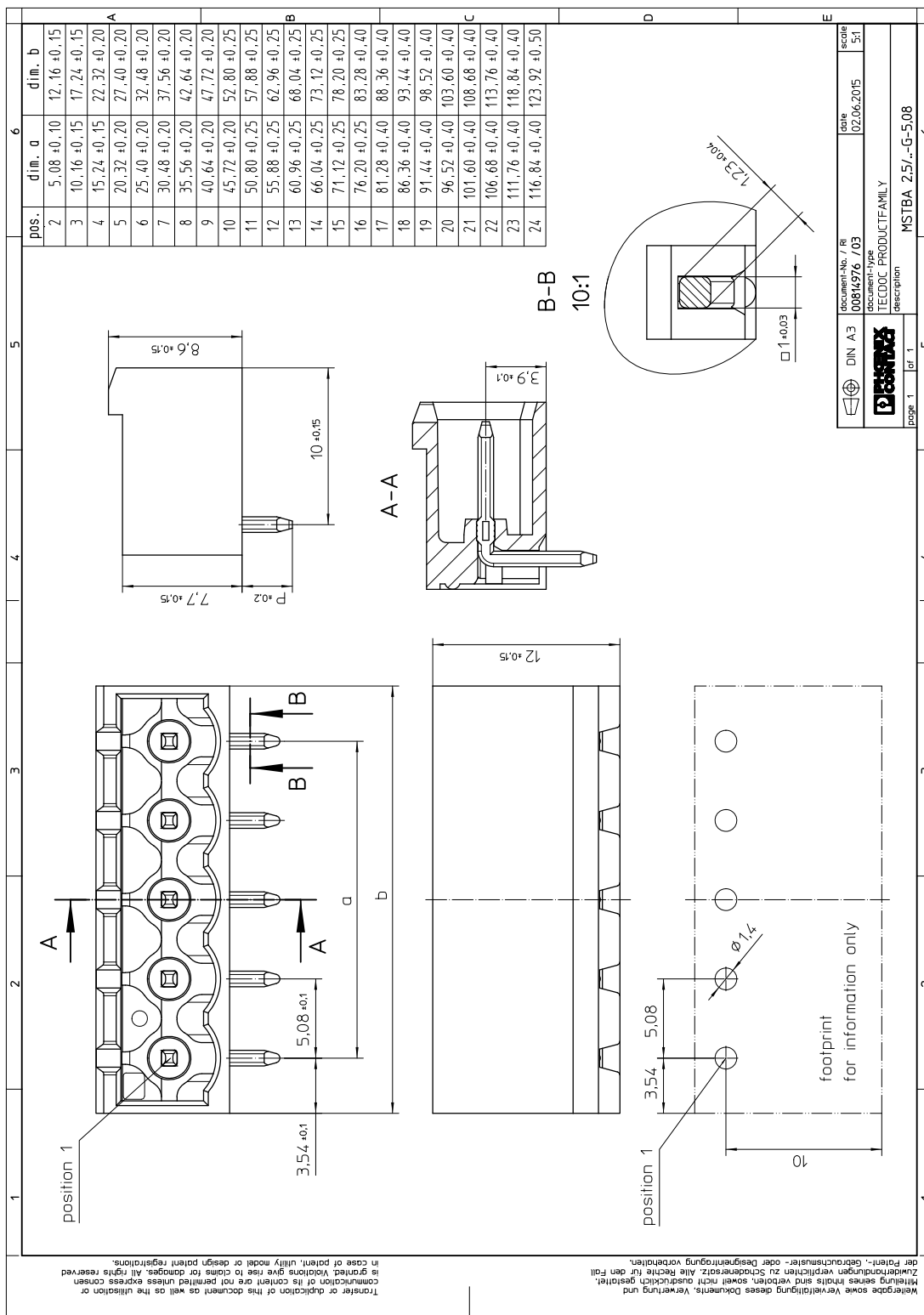
Length	12 mm
Width	17.16 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	10.16 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

1757255 MSTBA 2,5/ 3-G-5,08

7 Series drawing



1757255 MSTBA 2,5/ 3-G-5,08**8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	250

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)

1757255 MSTBA 2,5/ 3-G-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.	32 N

1757255 MSTBA 2,5/ 3-G-5,08**11 Electrical tests****11.1 Electrical data**

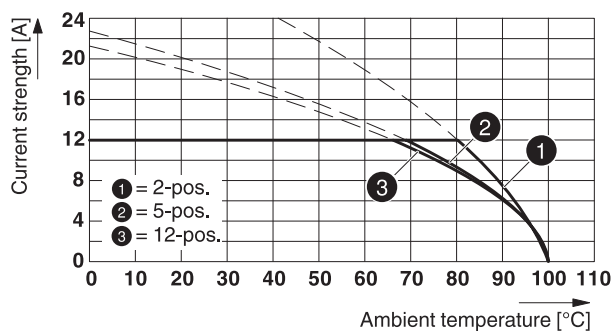
Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.1 mΩ
Degree of pollution	2

11.2 Air and creepage distances

Component	Header		
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	400 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	4 mm	3 mm	3.2 mm

1757255 MSTBA 2,5/ 3-G-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 ²
Note	

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

87699_1000_en

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

87720_1000_en

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

87797_1000_en

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

88567_1000_en


1757255 MSTBA 2,5/ 3-G-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
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protection class	
Protective conductor	without PE
Lock	no

15 Approvals

CSA 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	15 A	10 A		

VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil				
Voltage	250 V			
Current	12 A			

IECEE CB Scheme 				
mm ² /AWG/kcmil				
Voltage	250 V			
Current	12 A			

cULus Recognized 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	15 A	10 A		

EAC 				
--	--	--	--	--

1757255 MSTBA 2,5/ 3-G-5,08**16 Commercial Data**

Order No.	1757255
Type	MSTBA 2,5/ 3-G-5,08
Pieces per package	250
Net weight	1.1 g
GTIN	4017918029784
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

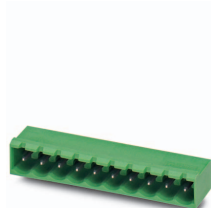
Order No.	Type
1719011	TVMSTB 2,5/ 3-ST-5,08
1754571	FKCN 2,5/ 3-ST-5,08
1757022	MSTB 2,5/ 3-ST-5,08
1769023	MSTBP 2,5/ 3-ST-5,08
1776168	MSTB 2,5/ 3-STZ-5,08
1777293	FRONT-MSTB 2,5/ 3-ST-5,08
1779990	MSTBT 2,5/ 3-ST-5,08
1792252	MVSTBR 2,5/ 3-ST-5,08
1792760	MVSTBW 2,5/ 3-ST-5,08
1808829	MSTBC 2,5/ 3-ST-5,08
1809514	MSTBC 2,5/ 3-STZ-5,08
1824133	MSTBU 2,5/ 3-STD-5,08
1824366	MSTBU 2,5/ 3-ST-5,08-FL
1826296	SMSTB 2,5/ 3-ST-5,08
1853023	TMSTBP 2,5/ 3-ST-5,08
1873061	FKC 2,5/ 3-ST-5,08
1873663	FKCVW 2,5/ 3-ST-5,08
1873964	FKCVR 2,5/ 3-ST-5,08
1883268	QC 1/ 3-ST-5,08
1902123	FKCT 2,5/ 3-ST-5,08
1962613	TFKC 2,5/ 3-ST-5,08
1975082	FKCS 2,5/ 3-ST-5,08

18 Accessories

Description	Order No.	Type
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0805412	SK 5,08/3,8:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
	0805085	SK 5,08/3,8:SO

1757255 MSTBA 2,5/ 3-G-5,08

19 Combination tests



MSTBA 2,5/..-G



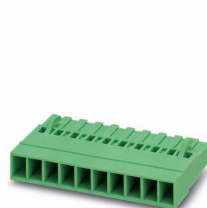
FKCN 2,5/..-ST



FRONT-MSTB 2,5/..-ST



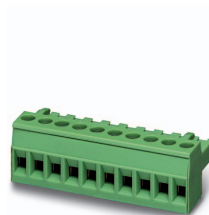
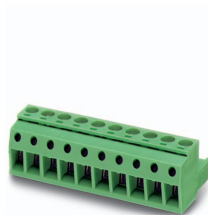
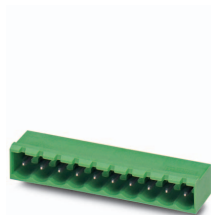
TMSTBP 2,5/..-ST



MSTBC 2,5/..-ST

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 ₁	1.1 mΩ	1.4 mΩ		
Insertion/withdrawal cycles	25	25		
Contact resistance R ₂	1.2 mΩ	1.4 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			
Insulation resistance Requirements > 5 MΩ	> 0.1 TΩ	> 0.2 TΩ		
Thermal tests (C)				
Tested number of positions	12	24		
Tested conductor cross section	2.5 mm ²	2.5 mm ²		
Test current	12 A	12 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 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		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	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		

1757255 MSTBA 2,5/ 3-G-5,08



MSTBA 2,5/...-G

MSTBC 2,5/...-STZ

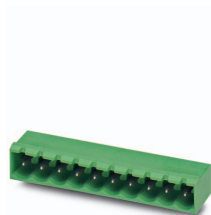
MSTBP 2,5/...-ST

MSTBT 2,5/...-ST

SMSTB 2,5/...-ST

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
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)				
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 Ω		> 0.2 T Ω	> 0.2 T Ω	> 0.2 T Ω
Thermal tests (C)				
Tested number of positions		24	18	24
Tested conductor cross section		2.5 mm ²	2.5 mm ²	2.5 mm ²
Test current				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	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
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
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 finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger

1757255 MSTBA 2,5/ 3-G-5,08



MSTBA 2,5/..-G

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 R₁

Insertion/withdrawal cycles

Contact resistance R₂

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



MVSTBR 2,5/..-ST

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 mΩ

25

2.4 mΩ

4.8 kV

2.21 kV

> 75 TΩ

24

2.5 mm²

12 A DC

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



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