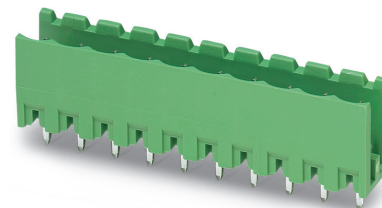


# Data sheet

Order No.: 1758018

Type: MSTBV 2,5/ 2-G-5,08

## PCB headers



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 2                   | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | green (6021)        | • Connection direction | 90 °                |
| • 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
- ✓ Vertical connection enables multi-row arrangement on the PCB
- ✓ Items that can be aligned in various pitches support flexible and space-saving PCB assembly
- ✓ Easy PCB replacement thanks to plug-in modules



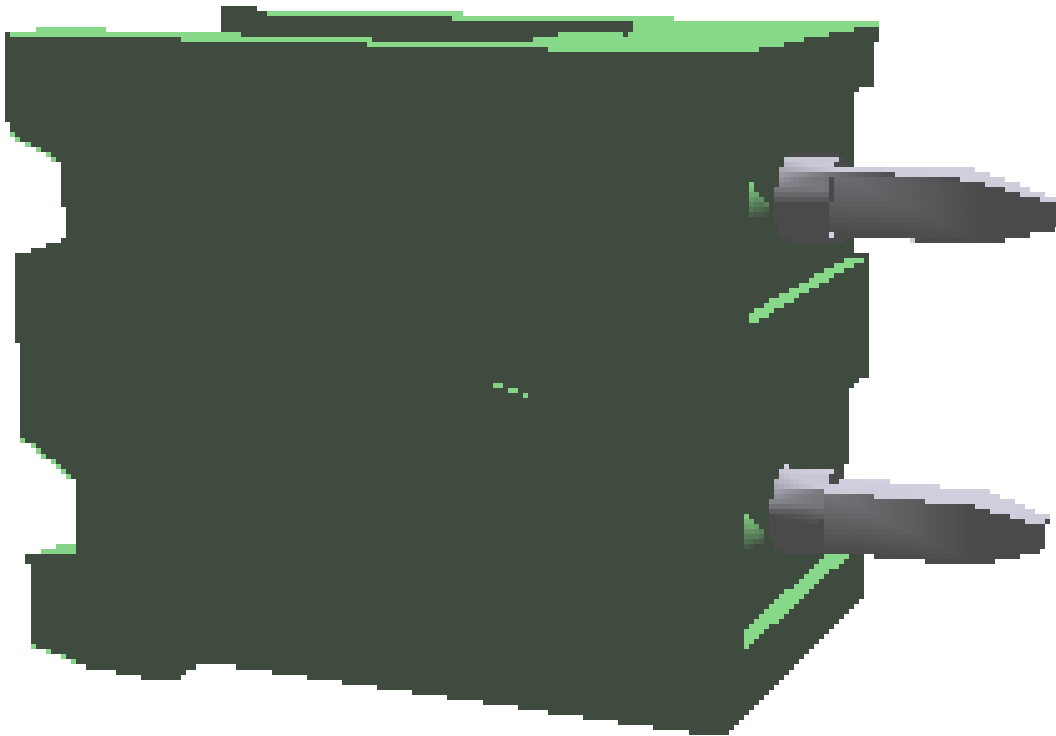
Make sure you always use the latest documentation.

It can be downloaded at: [phoenixcontact.net/product/1758018](https://phoenixcontact.net/product/1758018)

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



**1758018 MSTBV 2,5/ 2-G-5,08****5 General Technical Data****5.1 item properties**

Order No.	1758018
Type	MSTBV 2,5/ 2-G-5,08
Plug-in system	CLASSIC COMBICON
Product type	PCB headers
Type of contact	Male connector
Range of articles	MSTBV 2,5/..-G
Pitch	5.08 mm
Range of positions	2...12
Number of positions	2
Number of levels	1
Number of connections	2
Number of potentials	2
Mounting type	Wave soldering
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

**5.2 Mounting**

Type of locking	without
	without

**6 Material properties****6.1 Material of metal parts**

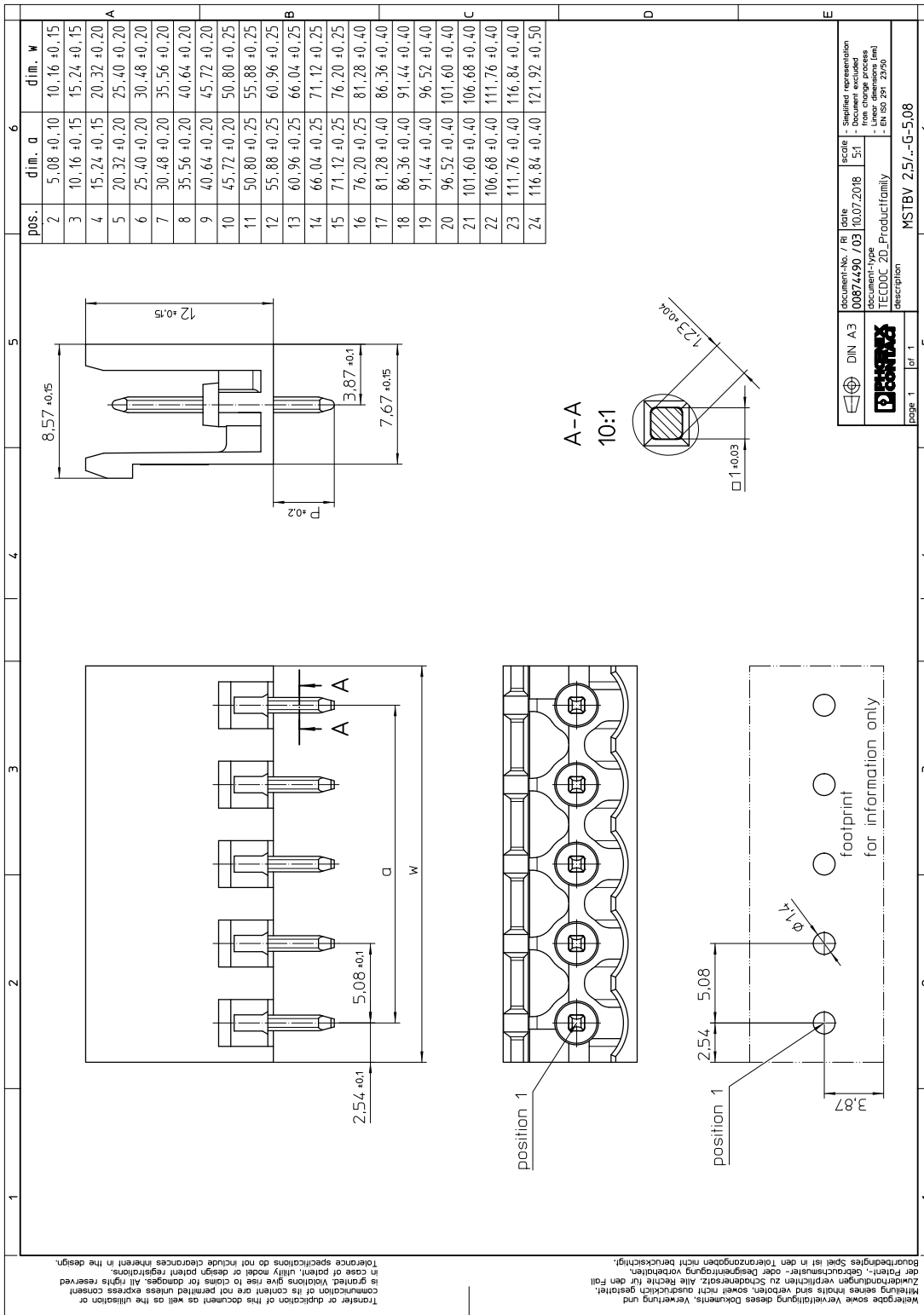
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
<b>Insulating material data</b>	<b>Housing</b>
Insulating material	PA
Insulating material group	I
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

**1758018 MSTBV 2,5/ 2-G-5,08****7 Dimensions****7.1 Dimensions for the product**

Length	8.57 mm
Width	10.16 mm
Height (without solder pin)	12 mm
Total height	15.9 mm
Solder pin [P]	3.9 mm
Dimension a	5.08 mm

1758018 MSTBV 2,5/ 2-G-5,08

8 Series drawing



**1758018 MSTBV 2,5/ 2-G-5,08**

---

**9 Application****10 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	250

**10.1 Temperature limit values**

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

**1758018 MSTBV 2,5/ 2-G-5,08****11 Mechanical tests****11.1 Visual examination**

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

**11.2 Dimensional test**

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

**11.3 Resistance of marking**

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

**11.4 Polarization and coding**

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

**11.5 Contact retention in insert**

Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	32 N



**1758018 MSTBV 2,5/ 2-G-5,08****12 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

**1758018 MSTBV 2,5/ 2-G-5,08****13 Electrical tests****13.1 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	2.4 mΩ
Degree of pollution	2

**13.2 Air and creepage distances**

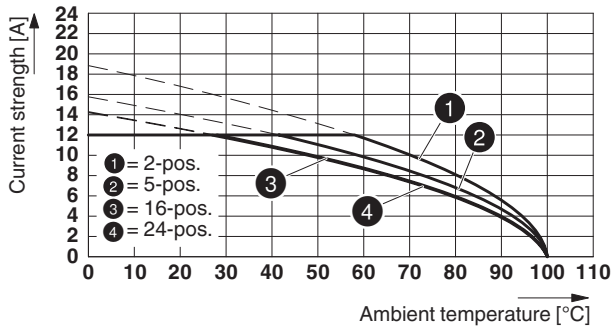
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	320 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	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	4 mm	3 mm	3.2 mm

1758018 MSTBV 2,5/ 2-G-5,08

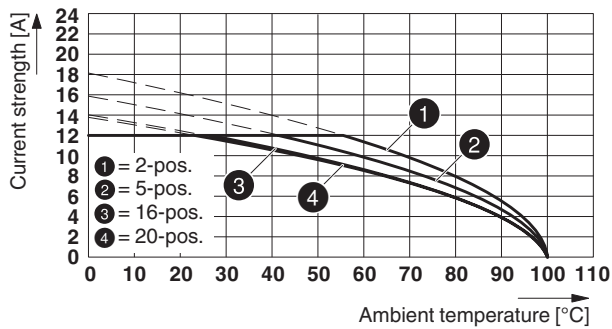
14 Current carrying capacity/derating curves

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 mm <sup>2</sup>

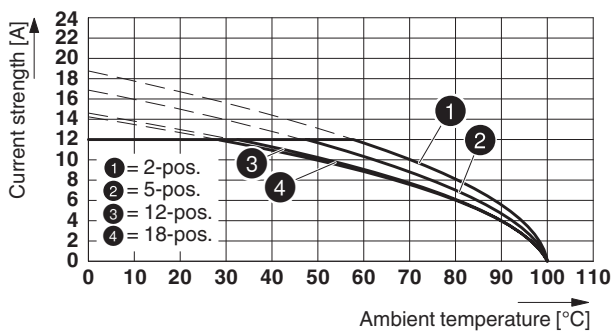
Type: MSTBP 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08

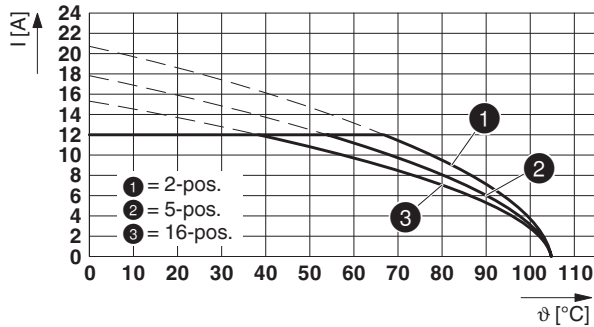
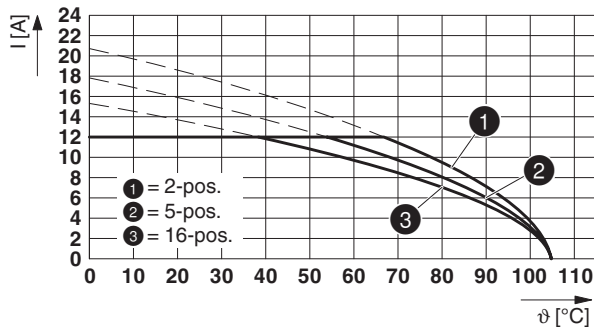


Type: MSTB 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08



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



**1758018 MSTBV 2,5/ 2-G-5,08****Type: FKCVR 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08****Type: FKCVW 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08****14.1 Insulation resistance**






Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 0.2 TΩ

**14.2 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
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

## 1758018 MSTBV 2,5/ 2-G-5,08

## 15 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	300 V	12 A	-	-
<b>Usegroup D</b>				
	300 V	10 A	-	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	250 V	12 A	-	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	250 V	12 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	300 V	12 A	-	-
<b>Usegroup D</b>				
	300 V	10 A	-	-

**1758018 MSTBV 2,5/ 2-G-5,08****16 Commercial Data**

Order No.	1758018
Type	MSTBV 2,5/ 2-G-5,08
Pieces per package	250
Net weight	0.69 g
GTIN	4017918030223
	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
1719008	TVMSTB 2,5/ 2-ST-5,08
1754568	FKCN 2,5/ 2-ST-5,08
1757019	MSTB 2,5/ 2-ST-5,08
1769010	MSTBP 2,5/ 2-ST-5,08
1777280	FRONT-MSTB 2,5/ 2-ST-5,08
1779987	MSTBT 2,5/ 2-ST-5,08
1792249	MVSTBR 2,5/ 2-ST-5,08
1792757	MVSTBW 2,5/ 2-ST-5,08
1808816	MSTBC 2,5/ 2-ST-5,08
1809501	MSTBC 2,5/ 2-STZ-5,08
1824120	MSTBU 2,5/ 2-STD-5,08
1824353	MSTBU 2,5/ 2-ST-5,08-FL
1826283	SMSTB 2,5/ 2-ST-5,08
1853010	TMSTBP 2,5/ 2-ST-5,08
1873058	FKC 2,5/ 2-ST-5,08
1873650	FKCVW 2,5/ 2-ST-5,08
1873951	FKCVR 2,5/ 2-ST-5,08
1883255	QC 1/ 2-ST-5,08
1902110	FKCT 2,5/ 2-ST-5,08
1962600	TFKC 2,5/ 2-ST-5,08
1975079	FKCS 2,5/ 2-ST-5,08

**18 Accessories**

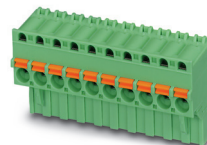
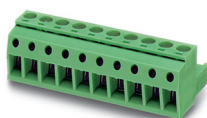
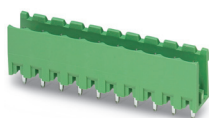
Description	Order No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0805412	SK 5,08/3,8:UNBEDRUCKT
	0805085	SK 5,08/3,8:SO
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
	1719008	TVMSTB 2,5/ 2-ST-5,08
	1754568	FKCN 2,5/ 2-ST-5,08
	1757019	MSTB 2,5/ 2-ST-5,08
	1769010	MSTBP 2,5/ 2-ST-5,08

**1758018 MSTBV 2,5/ 2-G-5,08**

Description	Order No.	Type
	1777280	FRONT-MSTB 2,5/ 2-ST-5,08
	1779987	MSTBT 2,5/ 2-ST-5,08
	1792249	MVSTBR 2,5/ 2-ST-5,08
	1792757	MVSTBW 2,5/ 2-ST-5,08
	1808816	MSTBC 2,5/ 2-ST-5,08
	1809501	MSTBC 2,5/ 2-STZ-5,08
	1824120	MSTBU 2,5/ 2-STD-5,08
	1824353	MSTBU 2,5/ 2-ST-5,08-FL
	1826283	SMSTB 2,5/ 2-ST-5,08
	1853010	TMSTBP 2,5/ 2-ST-5,08
	1873058	FKC 2,5/ 2-ST-5,08
	1873650	FKCVW 2,5/ 2-ST-5,08
	1873951	FKCVR 2,5/ 2-ST-5,08
	1883255	QC 1/ 2-ST-5,08
	1902110	FKCT 2,5/ 2-ST-5,08
	1962600	TFKC 2,5/ 2-ST-5,08
	1975079	FKCS 2,5/ 2-ST-5,08

## 1758018 MSTBV 2,5/ 2-G-5,08

## 19 Combination tests

**MSTBV 2,5/..-G**

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  $R_1$ 

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  $\geq (50/60 \text{ Hz})$ **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

**MSTBP 2,5/..-ST**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m $\Omega$ 

25

2.5 m $\Omega$ 

4.8 kV

2.21 kV

24

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m $\Omega$ 

25

2.4 m $\Omega$ 

4.8 kV

2.21 kV

20

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**MSTBT 2,5/..-ST**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m $\Omega$ 

25

2.5 m $\Omega$ 

4.8 kV

2.21 kV

18

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**FKCVR 2,5/..-ST**

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.1 m $\Omega$ 

25

2.3 m $\Omega$ 

4.8 kV

2.21 kV

12

2.5 mm<sup>2</sup>

12 A

Test passed

-40 °C/2 h

105 °C/168 h

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

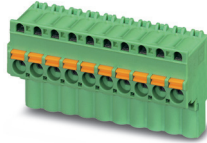
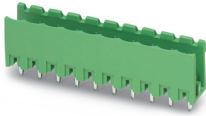
4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20  
test finger



**1758018 MSTBV 2,5/ 2-G-5,08****MSTBV 2,5/..-G**

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<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)**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

**FKCVW 2,5/..-ST**

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.1 mΩ

25

2.3 mΩ

4.8 kV

2.21 kV

12

2.5 mm<sup>2</sup>

12 A

Test passed

-40 °C/2 h

105 °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