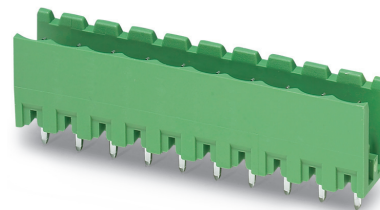


Order No.: 1758021

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

PCB headers



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 (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



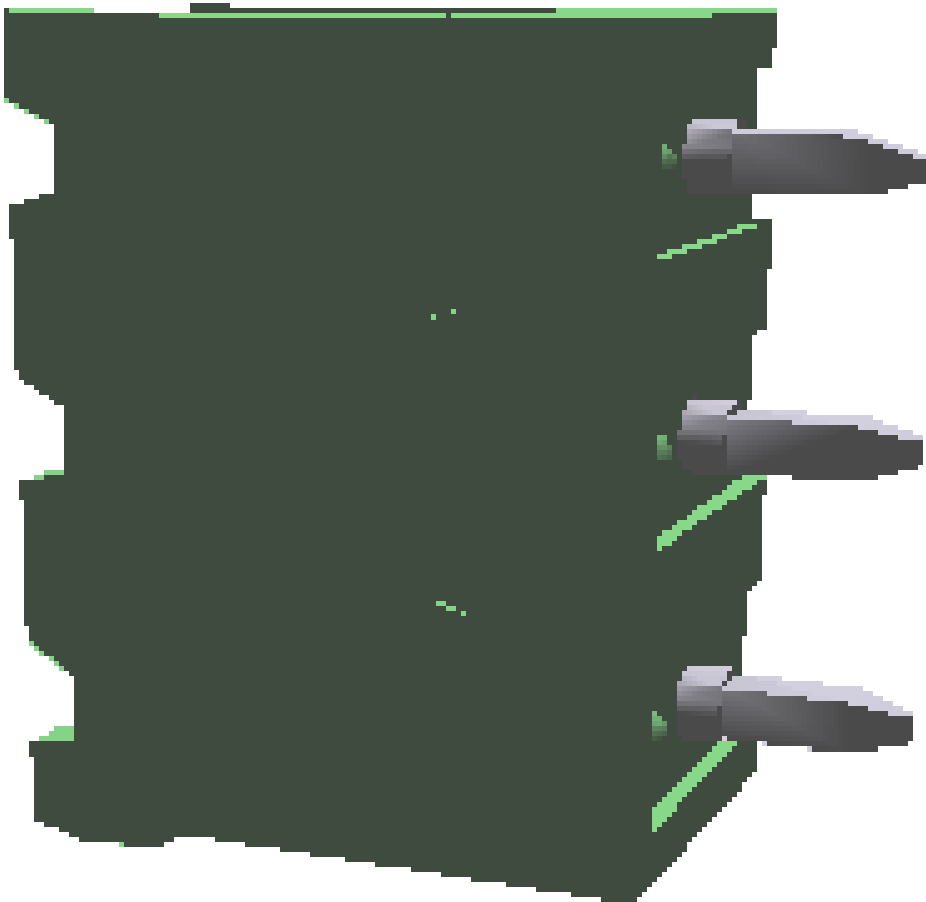
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1758021

1758021 MSTBV 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	General Technical Data	4
	5.1 item properties	4
6	Mounting.....	5
	6.1 Flange fixing.....	5
7	Material properties.....	5
	7.1 Material of metal parts.....	5
8	Dimensions.....	6
	8.1 Dimensions for the product	6
9	Series drawing.....	7
10	Application.....	8
11	Packaging information	8
	11.1 Temperature limit values	8
12	Mechanical tests.....	9
	12.1 Visual examination	9
	12.2 Dimensional test.....	9
	12.3 Resistance of marking	9
	12.4 Polarization and coding	9
	12.5 Contact retention in insert	9
13	Insertion and withdrawal forces	10
14	Electrical tests	11
	14.1 Electrical data	11
	14.2 Air and creepage distances	11
15	Current carrying capacity/derating curves	12
	15.1 Insulation resistance.....	14
	15.2 Vibration test	14
16	Approvals / Certificates.....	16
17	Commercial Data.....	17
18	corresponding plugs	17
19	Accessories.....	17
20	Combination tests.....	19

1758021 MSTBV 2,5/ 3-G-5,08

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



1758021 MSTBV 2,5/ 3-G-5,08**5 General Technical Data****5.1 item properties**

Order No.	1758021
Type	MSTBV 2,5/ 3-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	3
Number of levels	1
Number of connections	3
Number of potentials	3
Mounting type	Wave soldering
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

1758021 MSTBV 2,5/ 3-G-5,08**6 Mounting****6.1 Flange fixing**

Type of locking	without
Mounting flange	without

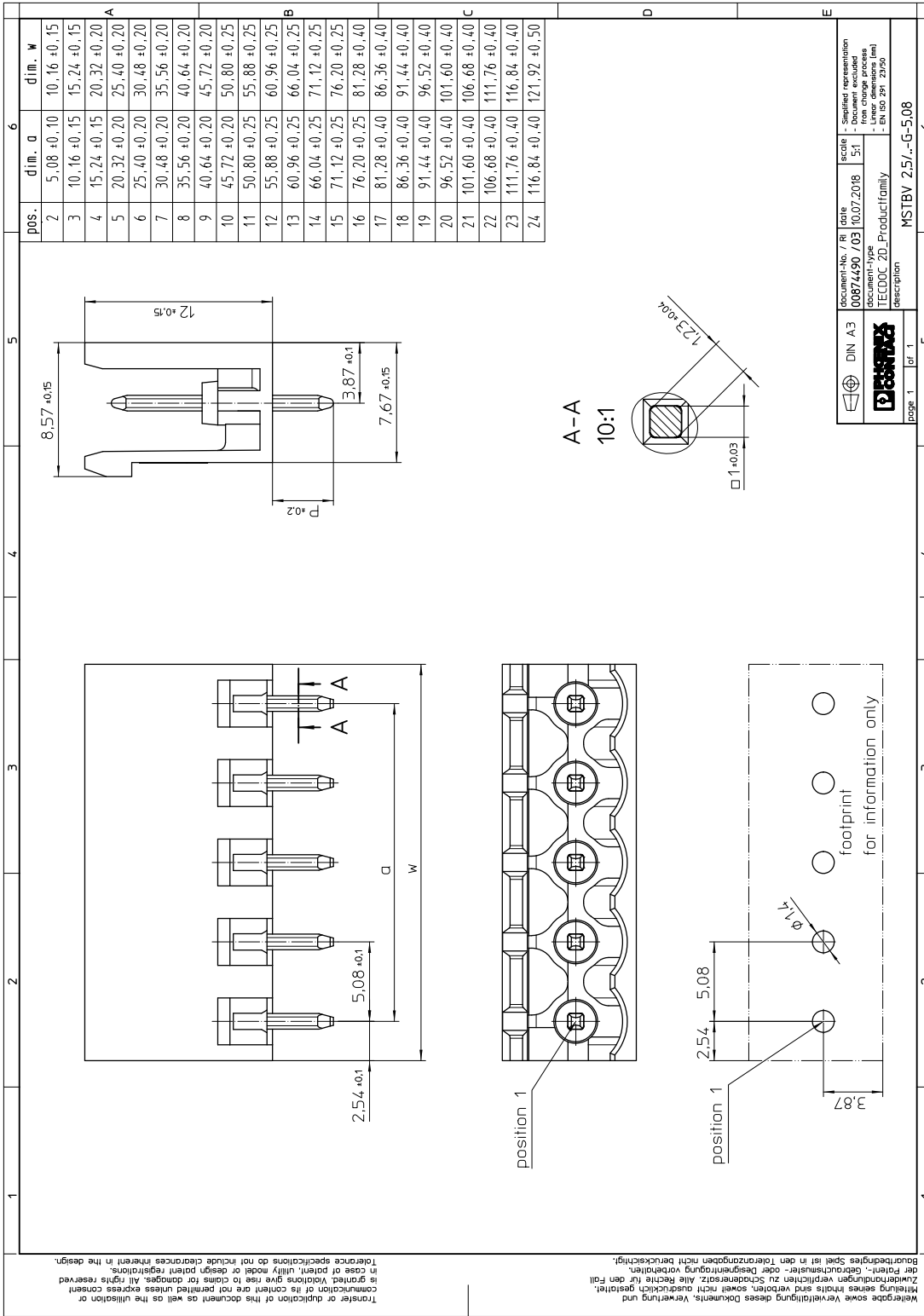
7 Material properties**7.1 Material of metal parts**

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 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	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

1758021 MSTBV 2,5/ 3-G-5,08**8 Dimensions****8.1 Dimensions for the product**

Length	8.57 mm
Width	15.24 mm
Height (without solder pin)	12 mm
Total height	15.9 mm
Solder pin [P]	3.9 mm
Dimension a	10.16 mm

9 Series drawing



1758021 MSTBV 2,5/ 3-G-5,08

10 Application**11 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	250

11.1 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)

1758021 MSTBV 2,5/ 3-G-5,08**12 Mechanical tests****12.1 Visual examination**

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

12.2 Dimensional test

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

12.3 Resistance of marking

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

12.4 Polarization and coding

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

12.5 Contact retention in insert

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

1758021 MSTBV 2,5/ 3-G-5,08**13 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

1758021 MSTBV 2,5/ 3-G-5,08**14 Electrical tests****14.1 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	2.4 mΩ
Degree of pollution	2

14.2 Air and creepage distances

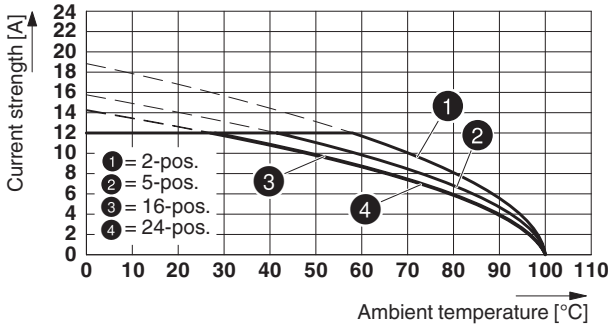
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	320 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category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

1758021 MSTBV 2,5/ 3-G-5,08

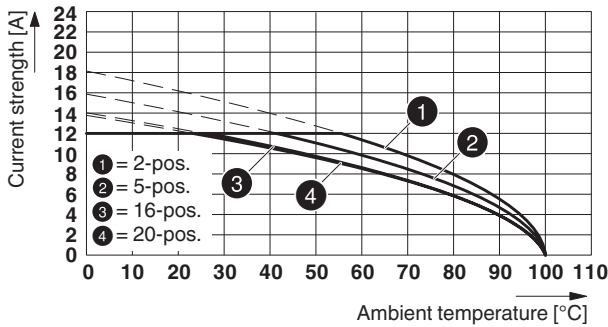
15 Current carrying capacity/derating curves

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 ²

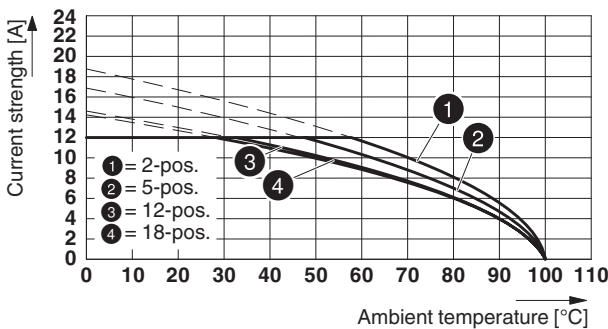
Type: MSTBP 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08



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

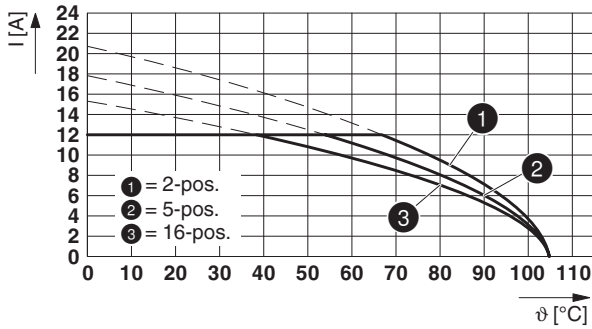


Type: MSTBT 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08-5,08

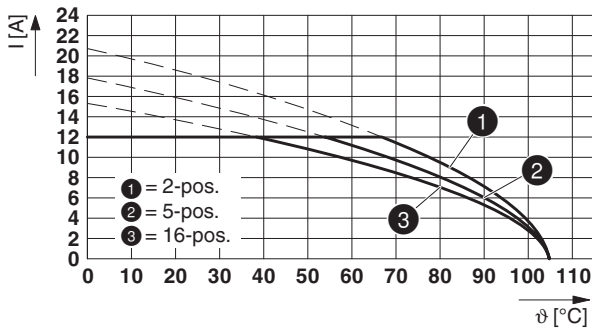


1758021 MSTBV 2,5/ 3-G-5,08

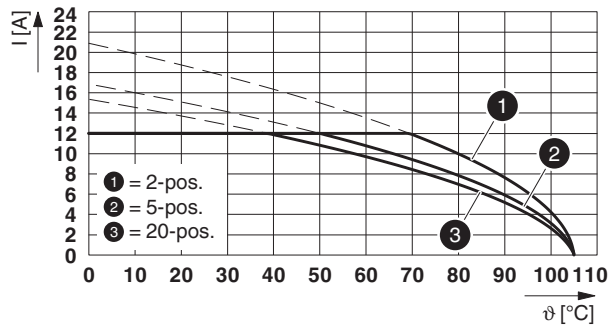
Type: FKCVR 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08



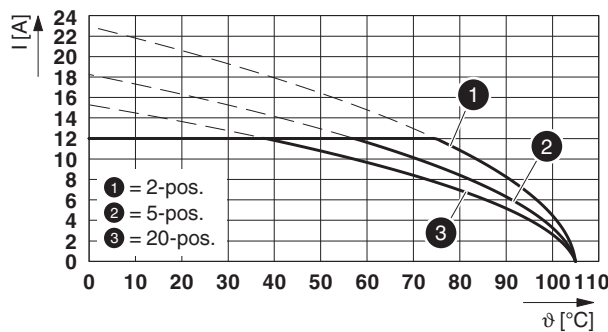
Type: FKCVW 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08



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

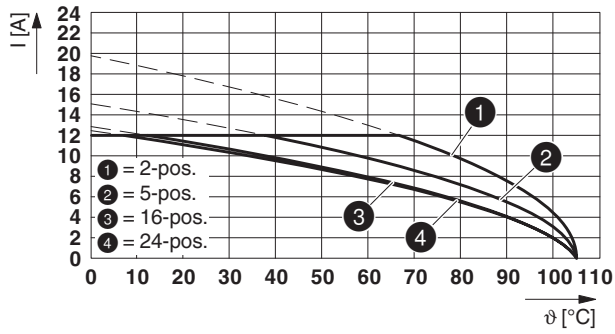


Type: FKCS 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08

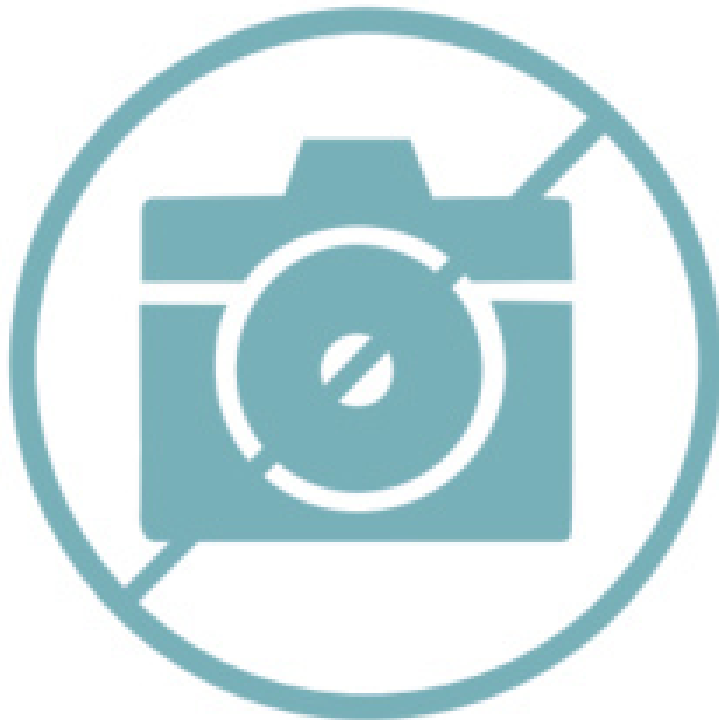


1758021 MSTBV 2,5/ 3-G-5,08

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



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



15.1 Insulation resistance

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






15.2 Vibration test

1758021 MSTBV 2,5/ 3-G-5,08

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.

1758021 MSTBV 2,5/ 3-G-5,08

16 Approvals / Certificates

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

1758021 MSTBV 2,5/ 3-G-5,08**17 Commercial Data**

Order No.	1758021
Type	MSTBV 2,5/ 3-G-5,08
Pieces per package	250
Net weight	0.924 g
GTIN	4017918030230
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

18 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

19 Accessories

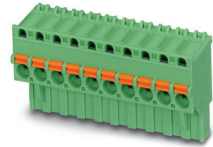
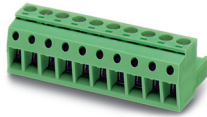
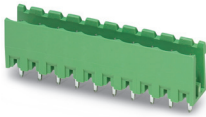
Description	Order No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0805412	SK 5,08/3,8:UNBEDRUCKT
	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
	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

1758021 MSTBV 2,5/ 3-G-5,08

Description	Order No.	Type
	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

1758021 MSTBV 2,5/ 3-G-5,08

20 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 Ω

25

2.5 m Ω

4.8 kV

2.21 kV

24

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m Ω

25

2.4 m Ω

4.8 kV

2.21 kV

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m Ω

25

2.5 m Ω

4.8 kV

2.21 kV

18

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

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.1 m Ω

25

2.3 m Ω

4.8 kV

2.21 kV

12

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

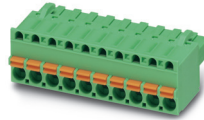
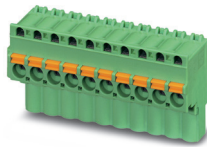
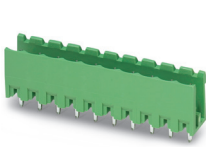
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1758021 MSTBV 2,5/ 3-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_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

FKCVW 2,5/..-ST

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.1 m Ω

25

2.3 m Ω

4.8 kV

2.21 kV

12

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °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**FKCT 2,5/..-ST**

IEC 61984

approx. 10 N / 8 N

Test passed

Test passed

2.5 m Ω

25

2.9 m Ω

4.8 kV

2.21 kV

20

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °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**FKCS 2,5/..-ST**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.4 m Ω

25

2.5 m Ω

4.8 kV

2.21 kV

20

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °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**IC 2,5/..-G**

IEC 61984

approx. 9 N / 8 N

Test passed

Test passed

2.3 m Ω

25

2.3 m Ω

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

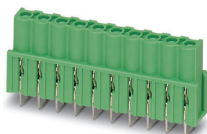
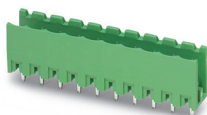
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Back of hand safety with
IP10 access probe

1758021 MSTBV 2,5/ 3-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 R₁

Insertion/withdrawal cycles

Contact resistance R₂Rated 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

ICV 2,5/..-G

IEC 61984

approx. 10 N / 8 N

Test passed

Test passed

2.3 mΩ

25

2.4 mΩ

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °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