

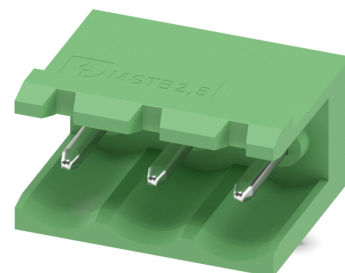
Data sheet

2024-03-19
Product version 04
Document revision 02

Item No.: 1759020

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

PCB headers



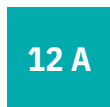
1 Main features



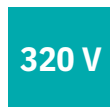
2,5 mm²



5,08 mm



IEC



IEC



WAVE



SIZE

- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 3 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (RAL 6021) | • 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
- ✓ Easy PCB replacement thanks to plug-in modules
- ✓ Well-known mounting principle allows worldwide use
- ✓ Plug-in direction parallel to the PCB
- ✓ Items that can be aligned in various pitches support flexible and space-saving PCB assembly



Make sure you always use the latest documentation.

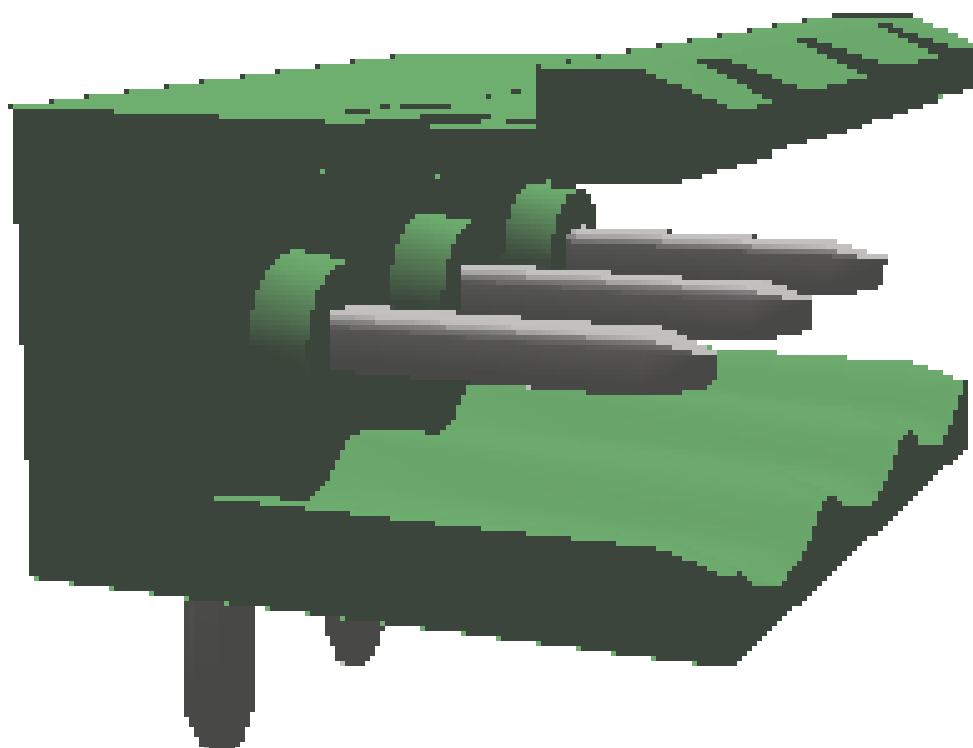
It can be downloaded at: phoenixcontact.com/product/1759020

1759020 MSTB 2,5/ 3-G-5,08**3 Table of contents**

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1759020 MSTB 2,5/ 3-G-5,08

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



1759020 MSTB 2,5/ 3-G-5,08**5 General Technical Data****5.1 item properties**

Item no.	1759020
Type	MSTB 2,5/ 3-G-5,08
Product line	COMBICON Connectors M
Connector system	COMBICON MSTB 2,5
Product type	PCB headers
Contact connection type	Pin
Range of articles	MSTB 2,5/..-G
Pitch	5.08 mm
Number of positions	3
Number of rows	1
Number of connections	3
Number of potentials	3
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

1759020 MSTB 2,5/ 3-G-5,08**6 Mounting****6.1 Flange mounting**

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 (RAL 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

1759020 MSTB 2,5/ 3-G-5,08**8 Dimensions****8.1 Dimensions for the product**

Length	12 mm
Width	15.24 mm
Height (without solder pin)	8.57 mm
Total height	11.8 mm
Solder pin [P]	3.23 mm

9 Series drawing

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1759020 MSTB 2,5/ 3-G-5,08**10 Product notes****10.1 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.

11 Application**12 Packaging specifications**

Type of packaging

packed in cardboard

Packing unit

250

12.1 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)

1759020 MSTB 2,5/ 3-G-5,08**13 Mechanical tests****13.1 Visual examination**

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

13.2 Dimensional test

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

13.3 Resistance of marking

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

13.4 Polarization and coding

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

13.5 Contact retention in insert

Contact holder in insert Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

1759020 MSTB 2,5/ 3-G-5,08**14 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

1759020 MSTB 2,5/ 3-G-5,08**15 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	1.4 mΩ
Degree of pollution	2

1759020 MSTB 2,5/ 3-G-5,08**16 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)	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

1759020 MSTB 2,5/ 3-G-5,08

17 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

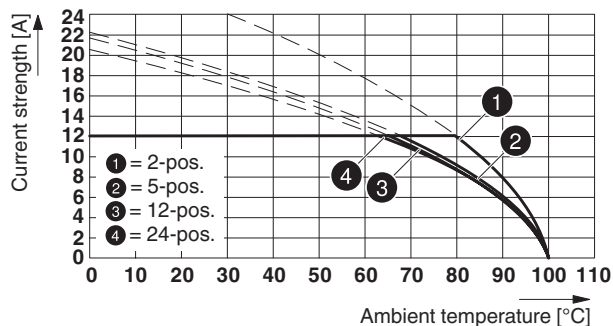
Reduction factor

0.8

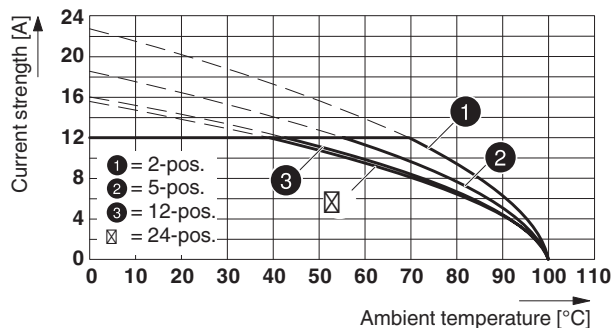
Conductor cross section

2.5 mm²

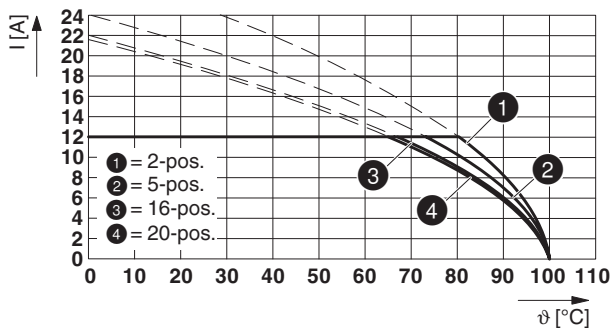
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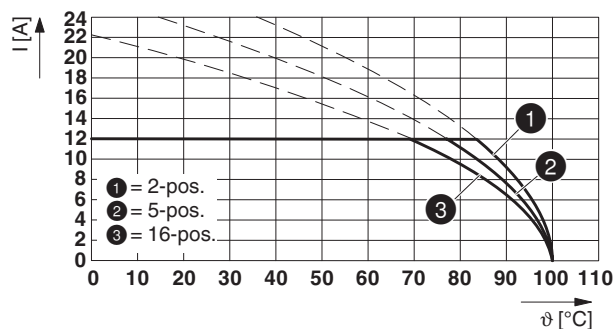
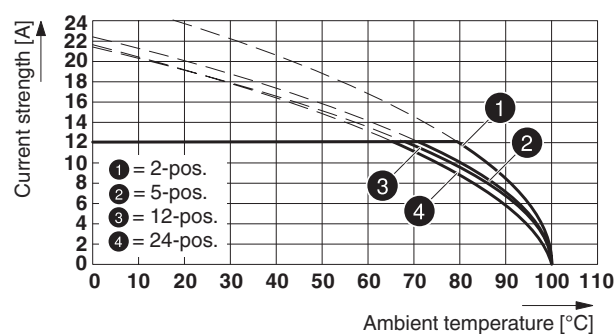
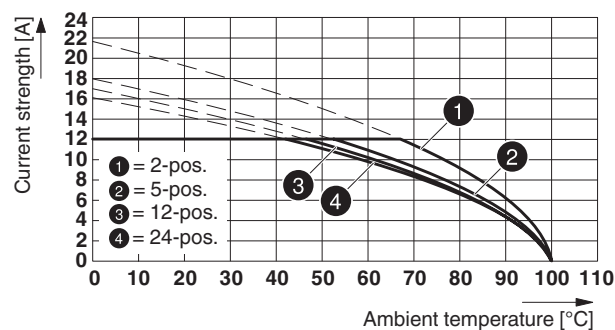


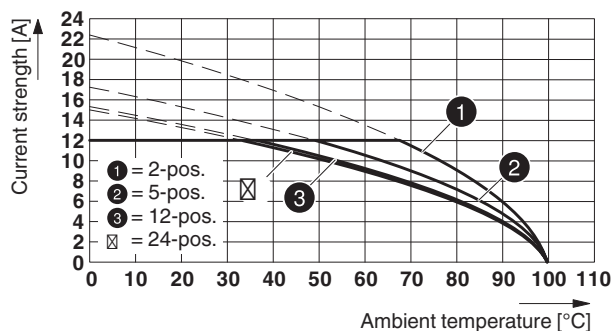
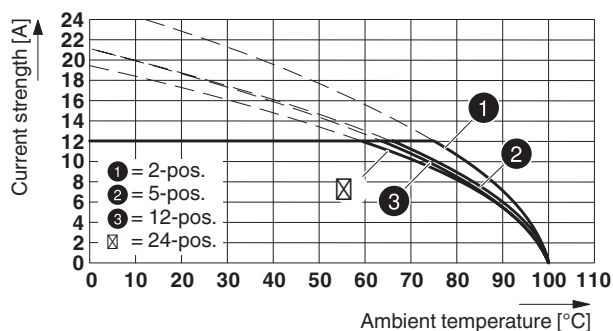
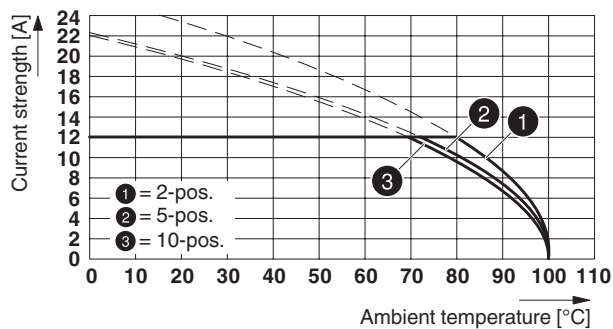
Type: MSTBU 2,5/...-STD-5,08 with MSTB 2,5/...-G-5,08

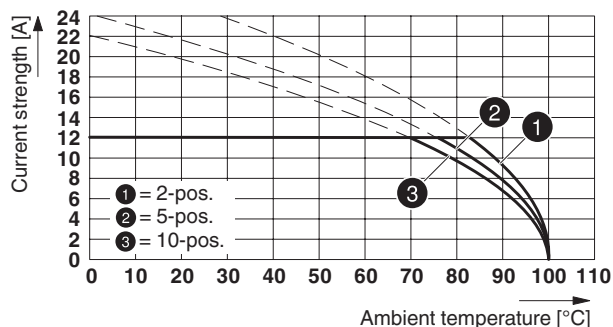
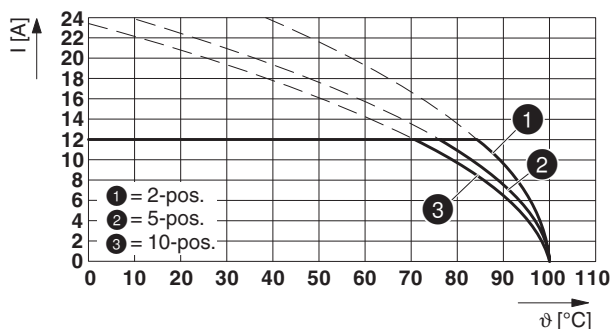
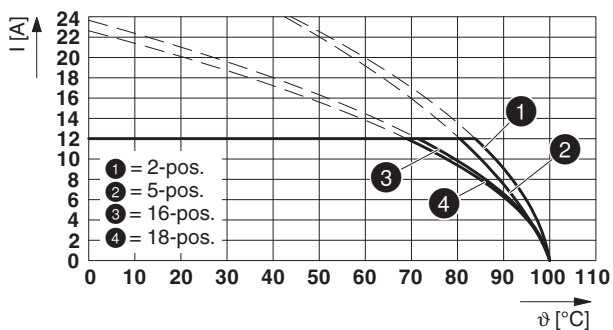
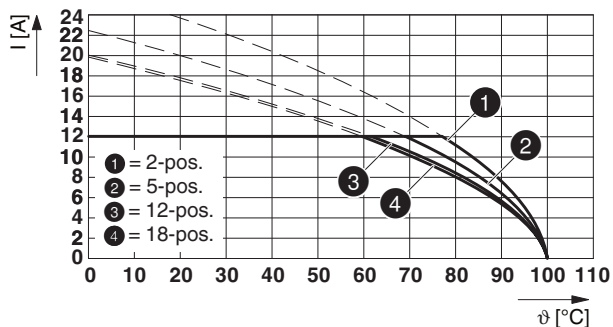


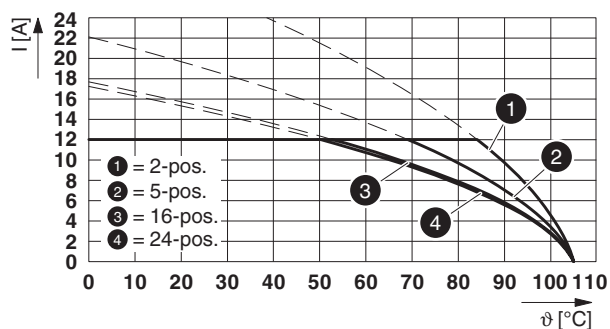
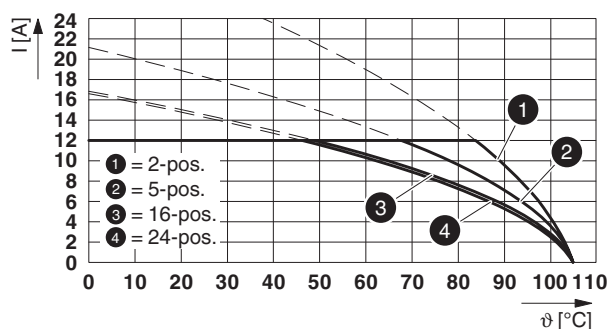
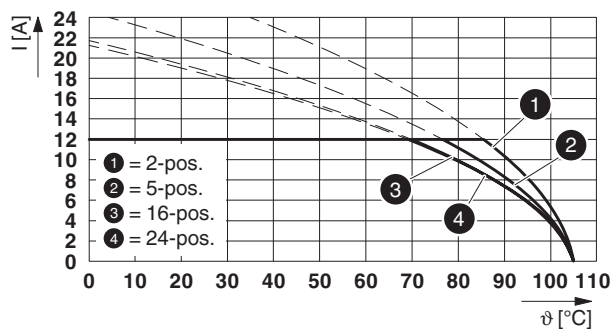
Type: FKCT 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08

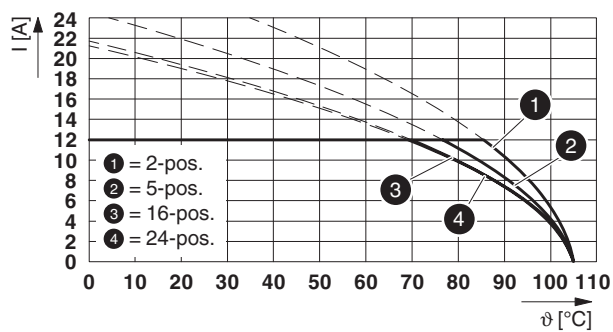


1759020 MSTB 2,5/ 3-G-5,08**Type: FKCV(W/R) 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: MSTBP 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: SMSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

1759020 MSTB 2,5/ 3-G-5,08**Type: MVSTB(R/W) 2,5/...-ST with MDSTBVA 2,5/...-G-5,08****Type: FRONT-MSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: TMSTBP 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

1759020 MSTB 2,5/ 3-G-5,08**Type: TVMSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: TFKC 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: FKCN 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08****Type: MSTBT 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

1759020 MSTB 2,5/ 3-G-5,08**Type: ICV 2,5/...-G-5,08 with MSTB 2,5/...-G-5,08****Type: IC 2,5/...-G-5,08 with MSTB 2,5/...-G-5,08****Type: FKCOR 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

1759020 MSTB 2,5/ 3-G-5,08**Type: FKCOV 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

1759020 MSTB 2,5/ 3-G-5,08**18 Environmental and durability tests****18.1 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 Hz ... 60.1 Hz)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connecting cables must be strain relieved.

18.2 Insulation resistance

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

1759020 MSTB 2,5/ 3-G-5,08

19 Data transmission

1759020 MSTB 2,5/ 3-G-5,08

20 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	10 A	-	-
Usegroup D				
	300 V	10 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	15 A	-	-
Usegroup D				
	300 V	10 A	-	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-

1759020 MSTB 2,5/ 3-G-5,08**21 Commercial Data**

Item no.	1759020
Type	MSTB 2,5/ 3-G-5,08
Packing unit	250
Net weight	0.9 g
GTIN	4017918030490
	Information that applies locally, see link on page 1

22 corresponding plugs

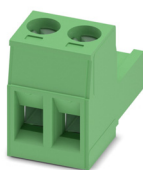
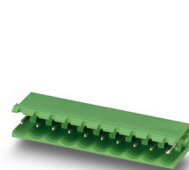
Item no.	Type
1719011	TVMSTB 2,5/ 3-ST-5,08
1754571	FKCN 2,5/ 3-ST-5,08
1757022	MSTB 2,5/ 3-ST-5,08
1777293	FRONT-MSTB 2,5/ 3-ST-5,08
1779990	MSTBT 2,5/ 3-ST-5,08
1792252	MVSTBR 2,5/ 3-ST-5,08
1792760	MVSTBW 2,5/ 3-ST-5,08
1808829	MSTBC 2,5/ 3-ST-5,08
1809514	MSTBC 2,5/ 3-STZ-5,08
1824133	MSTBU 2,5/ 3-STD-5,08
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

23 Accessories

Description	Item No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
Mounting flange, for fixing both ends of the header onto the PCB, green insulating material, with M 2 x 14 screws and nuts.	1759981	MSTB-BF
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	0805412	SK 5,08/3,8:UNBEDRUCKT

1759020 MSTB 2,5/ 3-G-5,08

24 Combination tests

**MSTB 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 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

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

MSTB 2,5/..-ST

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.4 m Ω

25

1.4 m Ω

4.8 kV

2.21 kV

> 5 M Ω

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**MSTBU 2,5/..-STD**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.5 m Ω

25

2.5 m Ω

4.8 kV

2.21 kV

> 5 M Ω

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.3 m Ω

25

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1 m Ω

25

1.1 m Ω

4.8 kV

2.21 kV

> 5 M Ω

16

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

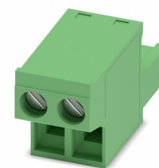
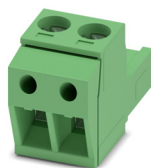
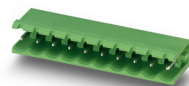
4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1759020 MSTB 2,5/ 3-G-5,08

**MSTB 2,5/..-G****MSTBP 2,5/..-ST****SMSTB 2,5/..-ST****MVSTBW 2,5/..-ST****FRONT-MSTB 2,5/..-ST**

IEC 61984

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

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 1st level

1.3 mΩ

2.4 mΩ

2.6 mΩ

1.6 mΩ

Contact resistance R_1 2nd level

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R_2

1.4 mΩ

2.4 mΩ

2.6 mΩ

1.6 mΩ

Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

4.8 kV

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

2.21 kV

Insulation resistance
Requirements > 5 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

Thermal tests (C)

Tested number of positions

24

24

24

24

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²2.5 mm²

Test current

12 A

12 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

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 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

4.8 kV

Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$

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

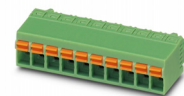
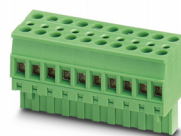
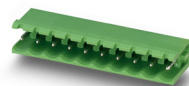
IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

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

1759020 MSTB 2,5/ 3-G-5,08

**MSTB 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 1st levelContact resistance R₁ 2nd level

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)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

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

TMSTBP 2,5/..-ST

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.1 mΩ

25

1.1 mΩ

4.8 kV

2.21 kV

> 5 MΩ

10

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.1 mΩ

25

1.2 mΩ

4.8 kV

2.21 kV

> 5 MΩ

10

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

IEC 61984

approx. 12 N / 11 N

Test passed

Test passed

1.1 mΩ

25

1.1 mΩ

4.8 kV

2.21 kV

> 5 MΩ

10

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1 mΩ

25

1.1 mΩ

4.8 kV

2.21 kV

> 5 MΩ

18

2.5 mm²

12 A

Test passed

-40 °C/2 h

100 °C/168 h

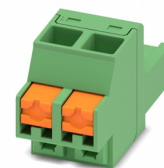
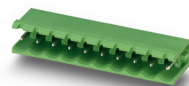
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1759020 MSTB 2,5/ 3-G-5,08**MSTB 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 1st levelContact resistance R₁ 2nd level

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)Insulation resistance
Requirements > 5 MΩ**Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°CUpper 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

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

MSTBT 2,5/..-ST

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.4 mΩ

25

1.4 mΩ

4.8 kV

2.21 kV

> 5 MΩ

18

2.5 mm²

12 A

Test passed

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

IEC 61984

approx. 11 N / 8 N

Test passed

Test passed

1.2 mΩ

25

1.3 mΩ

4.8 kV

2.21 kV

> 5 MΩ

24

2.5 mm²

12 A

Test passed

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. 10 N / 8 N

Test passed

Test passed

1.2 mΩ

25

1.3 mΩ

4.8 kV

2.21 kV

> 5 MΩ

24

2.5 mm²

12 A

Test passed

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

IEC 61984

approx. 10 N / 9 N

Test passed

Test passed

1.2 mΩ

25

1.2 mΩ

4.8 kV

2.21 kV

> 5 MΩ

24

2.5 mm²

12 A

Test passed

Test passed

-40 °C/2 h

105 °C/168 h

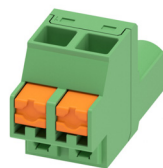
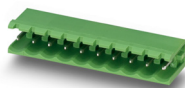
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1759020 MSTB 2,5/ 3-G-5,08**MSTB 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 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

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

FKCOW 2,5/..-ST

IEC 61984

approx. 10 N / 9 N

Test passed

Test passed

1.2 m Ω

25

1.2 m Ω

4.8 kV

2.21 kV

> 5 M Ω

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