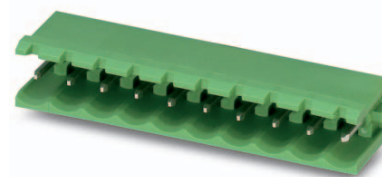


# Data sheet

**Order No.: 1759091**

**Type: MSTB 2,5/10-G-5,08**

**Header**



## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 10                  | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • 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
- ✓ 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.

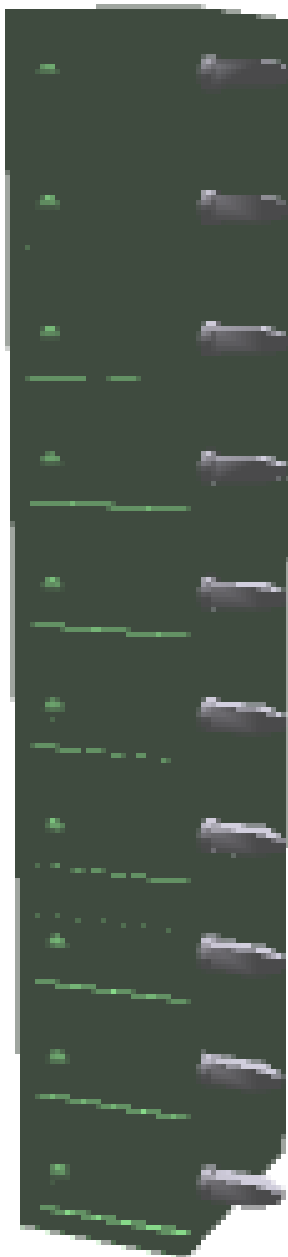
It can be downloaded at: [phoenixcontact.net/product/1759091](http://phoenixcontact.net/product/1759091)

**1759091 MSTB 2,5/10-G-5,08****3 Table of contents**

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1759091 MSTB 2,5/10-G-5,08

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



**1759091 MSTB 2,5/10-G-5,08****5 item properties**

Order No.	1759091
Type	MSTB 2,5/10-G-5,08
Type of contact	Male connector
Range of articles	MSTB 2,5/...G
Pitch	5.08 mm
Number of positions	10
Locking	without
Mounting type	Wave soldering
Pin layout	Linear pinning

**5.1 Material data**

<b>Material of metal parts</b>	
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
<b>Insulating material data</b>	
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	50.8 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	45.72 mm

**6.2 Dimensions for PCB design**

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

**1759091 MSTB 2,5/10-G-5,08**

## 7 Series drawing

## 8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	100

## 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)

**1759091 MSTB 2,5/10-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.	41 N

**1759091 MSTB 2,5/10-G-5,08****11 Electrical tests****11.1 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	1.4 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

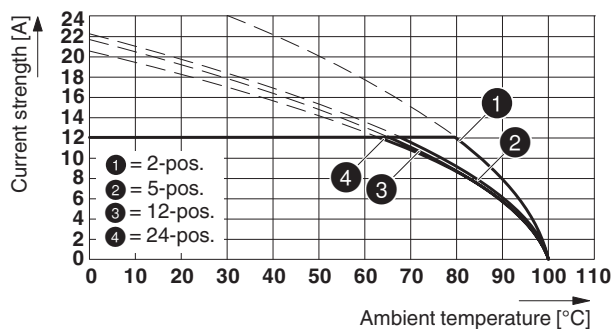
Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	3.2 mm	3 mm	3 mm

1759091 MSTB 2,5/10-G-5,08

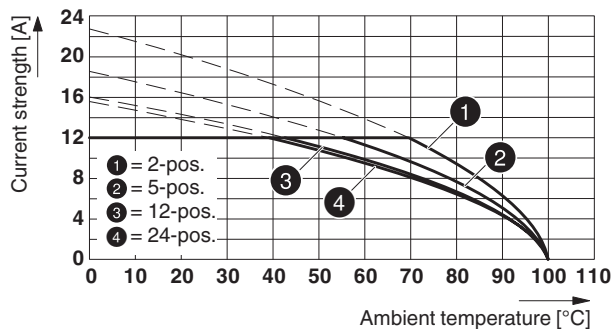
12 Current carrying capacity/derating curves

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 <sup>2</sup>
Note	

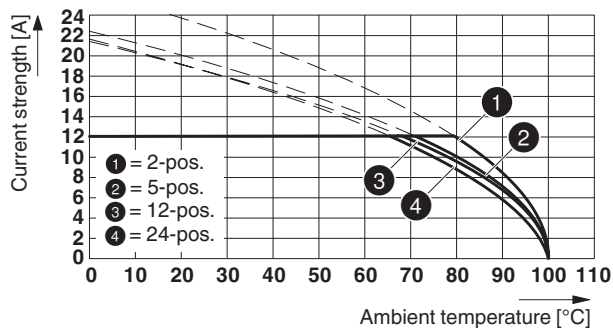
Type: MSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



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

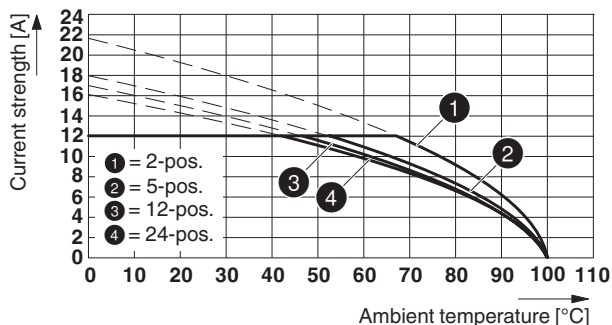


Type: MSTBP 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08

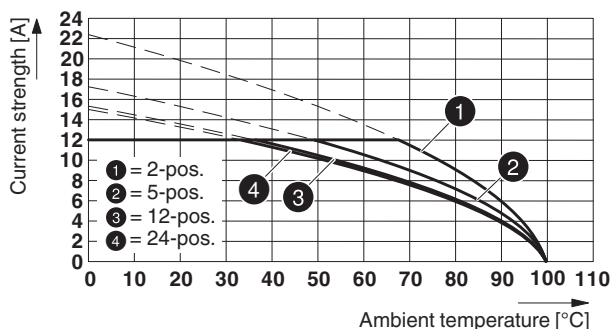


1759091 MSTB 2,5/10-G-5,08

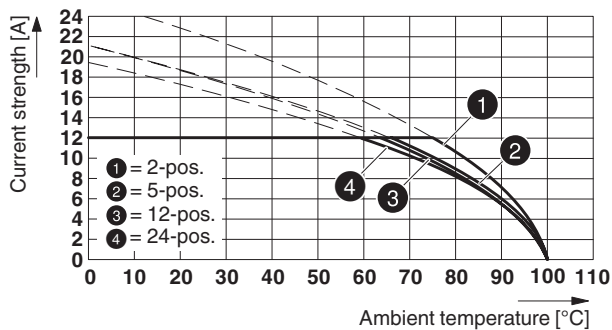
Type: SMSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



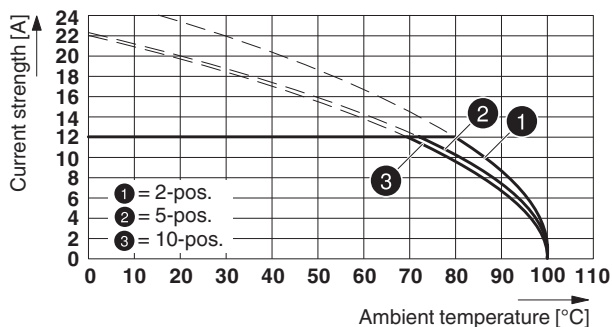
Type: MVSTB(R/W) 2,5/...-ST with MDSTBVA 2,5/...-G-5,08



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



2017-09-29

Product version 04

Document revision 0

**1759091 MSTB 2,5/10-G-5,08**

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

86006\_1000\_en


**1759091 MSTB 2,5/10-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**

<b>CSA</b> 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil				
Voltage	300 V	300 V		
Current	10 A	10 A		

<b>VDE Gutachten mit Fertigungsüberwachung</b> 				
mm <sup>2</sup> /AWG/kcmil				
Voltage	250 V			
Current	12 A			

<b>IECEE CB Scheme</b> 				
mm <sup>2</sup> /AWG/kcmil				
Voltage	250 V			
Current	12 A			

<b>cULus Recognized</b> 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil				
Voltage	300 V	150 V		
Current	15 A	15 A		

<b>EAC</b> 				
--	--	--	--	--

**1759091 MSTB 2,5/10-G-5,08****16 Commercial Data**

Order No.	1759091
Type	MSTB 2,5/10-G-5,08
Pieces per package	100
Net weight	3.618 g
GTIN	4017918030568
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**17 corresponding plugs**

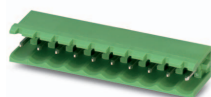
Order No.	Type
1719082	TVMSTB 2,5/10-ST-5,08
1754649	FKCN 2,5/10-ST-5,08
1757093	MSTB 2,5/10-ST-5,08
1764303	MSTB 2,5/10-STZ-5,08
1769094	MSTBP 2,5/10-ST-5,08
1777361	FRONT-MSTB 2,5/10-ST-5,08
1781069	MSTBT 2,5/10-ST-5,08
1792320	MVSTBR 2,5/10-ST-5,08
1792838	MVSTBW 2,5/10-ST-5,08
1808890	MSTBC 2,5/10-ST-5,08
1809585	MSTBC 2,5/10-STZ-5,08
1824201	MSTBU 2,5/10-STD-5,08
1824434	MSTBU 2,5/10-ST-5,08-FL
1826364	SMSTB 2,5/10-ST-5,08
1831391	MSTBVK 2,5/10-ST-5,08
1833894	UMSTBVK 2,5/10-ST-5,08
1853094	TMSTBP 2,5/10-ST-5,08
1873139	FKC 2,5/10-ST-5,08
1873731	FKCVW 2,5/10-ST-5,08
1874031	FKCVR 2,5/10-ST-5,08
1883336	QC 1/10-ST-5,08
1902194	FKCT 2,5/10-ST-5,08
1962684	TFKC 2,5/10-ST-5,08
1975150	FKCS 2,5/10-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
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
	0805085	SK 5,08/3,8:SO
	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

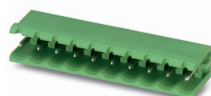
1759091 MSTB 2,5/10-G-5,08

19 Combination tests



	<b>MSTB 2,5/..-G</b>	<b>MSTB 2,5/..-ST</b>	<b>MSTBU 2,5/..-STD</b>	<b>MSTBP 2,5/..-ST</b>	<b>SMSTB 2,5/..-ST</b>
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>					
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
<b>Durability tests (B)</b>					
Contact resistance R <sub>1</sub>		1.4 mΩ	2.5 mΩ	1.3 mΩ	2.4 mΩ
Insertion/withdrawal cycles		25	25	25	25
Contact resistance R <sub>2</sub>		1.4 mΩ	2.5 mΩ	1.4 mΩ	2.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ		> 0.3 TΩ	> 0.5 TΩ	> 50 GΩ	> 0.1 TΩ
<b>Thermal tests (C)</b>					
Tested number of positions		24	24	24	24
Tested conductor cross section		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current		12 A	12 A	12 A	12 A
Upper limiting temperature Requirements < 100°C		Test passed	Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>					
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 (ISO 6988)		0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>					
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 finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger

**1759091 MSTB 2,5/10-G-5,08**



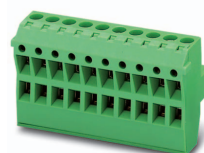
**MSTB 2,5/10-G**



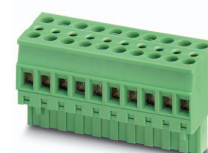
**MVSTBW 2,5/10-ST**



**FRONT-MSTB 2,5/10-ST**



**TMSTBP 2,5/10-ST**



**TVMSTB 2,5/10-ST**

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>				
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
<b>Durability tests (B)</b>				
Contact resistance R <sub>1</sub>	2.6 mΩ	1.6 mΩ	1.1 mΩ	1.1 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R <sub>2</sub>	2.6 mΩ	1.6 mΩ	1.1 mΩ	1.2 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 0.2 TΩ	> 0.3 TΩ	> 0.4 TΩ	> 0.5 TΩ
<b>Thermal tests (C)</b>				
Tested number of positions	24	24	10	10
Tested conductor cross section	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current	12 A	12 A	12 A	12 A
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>				
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 (ISO 6988)	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>				
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 finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger



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