

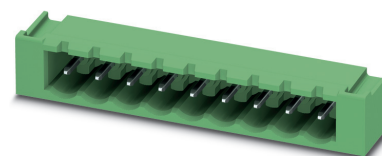
Data sheet

2021-05-11
Product version 00
Document revision 01

Order No.: 1809102

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

PCB header



The figure shows a 9-position version

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 5 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (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
- ✓ Well-known mounting principle allows worldwide use
- ✓ Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- ✓ Closed contour for optimum stability of the plug-in connection



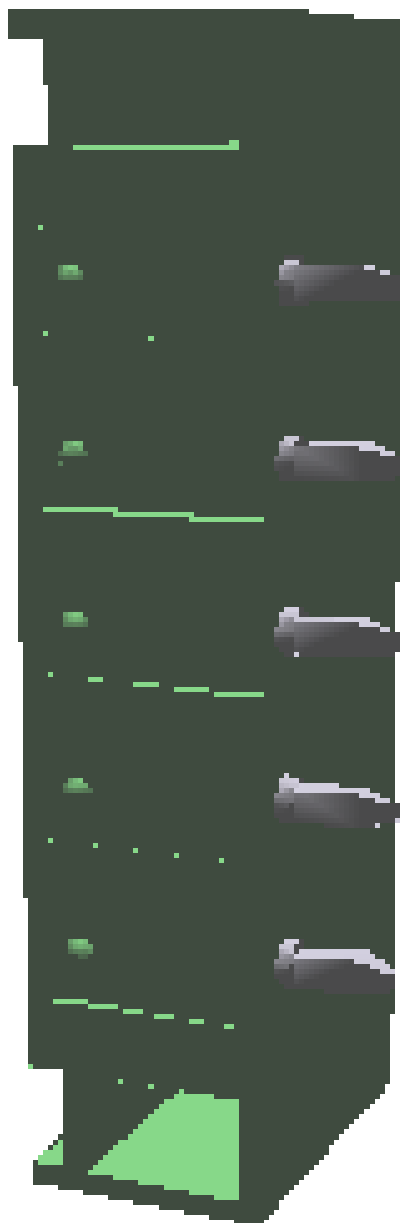
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1809102

1809102 MSTBA 2,5/ 5-G-5,08-LR**3 Table of contents**

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1809102 MSTBA 2,5/ 5-G-5,08-LR

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



1809102 MSTBA 2,5/ 5-G-5,08-LR**5 General Technical Data****5.1 item properties**

Order No.	1809102
Type	MSTBA 2,5/ 5-G-5,08-LR
Connector system	CLASSIC COMBICON
Product type	PCB header
Type of contact	Male connector
Range of articles	MSTBA 2,5/...-G-LR
Pitch	5.08 mm
Number of positions	5
Number of levels	1
Number of connections	5
Number of potentials	5
Mounting type	Wave soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1

1809102 MSTBA 2,5/ 5-G-5,08-LR**6 Mounting****6.1 Flange mounting**

Type of locking	Snap-in locking
Mounting flange	Lock & Release

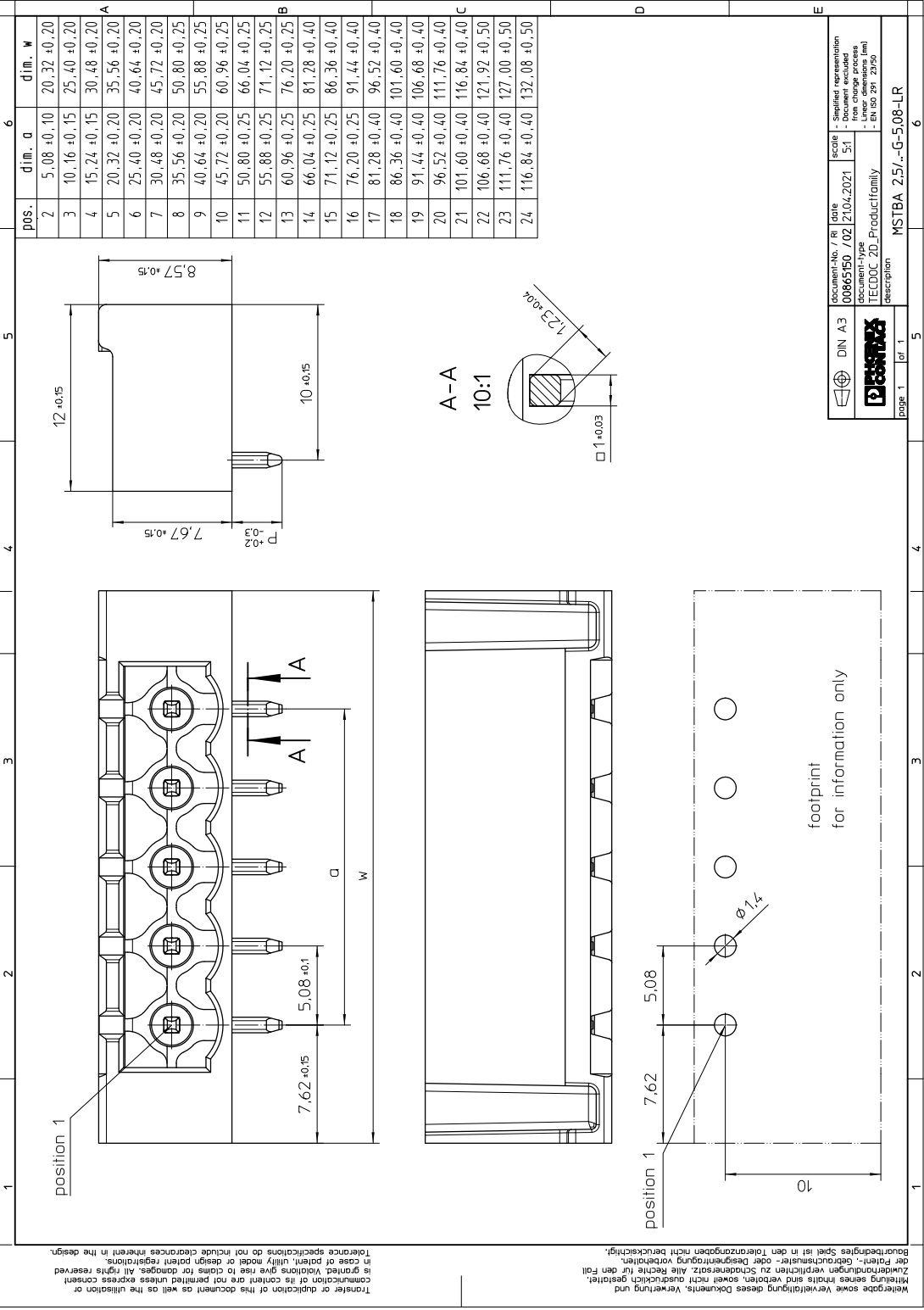
7 Material properties**7.1 Material of metal parts**

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 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

1809102 MSTBA 2,5/ 5-G-5,08-LR**8 Dimensions****8.1 Dimensions for the product**

Length	12 mm
Width	35.56 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm

9 Series drawing



1809102 MSTBA 2,5/ 5-G-5,08-LR**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 information**

Type of packaging

packed in cardboard

Pieces per package

50

12.1 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)

1809102 MSTBA 2,5/ 5-G-5,08-LR**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

1809102 MSTBA 2,5/ 5-G-5,08-LR**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.		11 N

1809102 MSTBA 2,5/ 5-G-5,08-LR**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	1.3 mΩ
Degree of pollution	2

15.1 Air and creepage distances

Component	PCB header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 225		
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	3.2 mm	4 mm

1809102 MSTBA 2,5/ 5-G-5,08-LR**16 Current carrying capacity/derating curves**

Specification

IEC 61984:2008-10

Note

Representation based on IEC 60512-5-2:2002-02

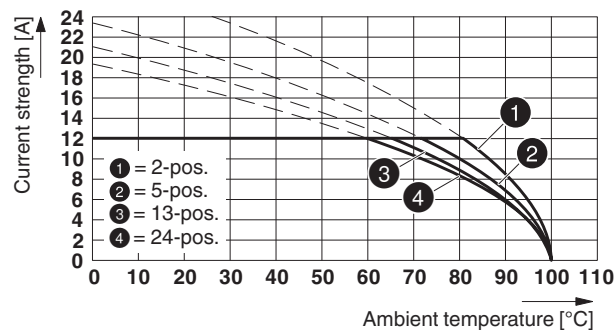
Note

For number of positions, see diagram

Reduction factor

0.8

Conductor cross section

2.5 mm²**Type: FKCO(R/W) 2,5/...-ST-5,08-LR with MSTBA(R/W) 2,5/...-G-5,08-LR**

1809102 MSTBA 2,5/ 5-G-5,08-LR**17 Environmental and durability tests****17.1 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
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

17.2 Insulation resistance

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

1809102 MSTBA 2,5/ 5-G-5,08-LR**18 Approvals / Certificates**

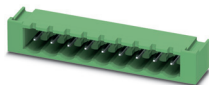
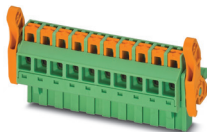
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup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

1809102 MSTBA 2,5/ 5-G-5,08-LR**19 Commercial Data**

Order No.	1809102
Type	MSTBA 2,5/ 5-G-5,08-LR
Pieces per package	50
Net weight	3.113 g
GTIN	4046356702553
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

20 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

1809102 MSTBA 2,5/ 5-G-5,08-LR**21 Combination tests****MSTBA 2,5/..-G-LR****FKCOR 2,5/..-ST-LR**

IEC 61984

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 8 N / 11 N

Polarization when inserted
Requirement >20 N

Test passed

Contact holder in insert
Requirements >20 N

Test passed

Durability tests (B)Contact resistance R_1 1st level

1.3 mΩ

Contact resistance R_1 2nd level

Insertion/withdrawal cycles

25

Contact resistance R_2

1.3 mΩ

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

4.8 kV

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

2.21 kV

Thermal tests (C)

Tested number of positions

24

Tested conductor cross section

2.5 mm²

Test current

12 A

Upper limiting temperature
Requirements < 100°C

Test passed

Climatic tests (D)

Test sequence 1: low temperature storage

-40 °C/2 h

Test sequence 2: heat storage

100 °C/168 h

Test sequence 3: noxious gas storage
(ISO 6988)0.2 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

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

2.21 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test finger