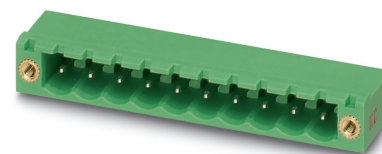


**Order No.: 1924114**

**Type: MSTB 2,5 HC/ 5-GF-5,08**

**PCB header**



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 5                   | • Nominal current      | 16 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • 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

- ✓ Well-known mounting principle allows worldwide use
- ✓ Screwable flange for superior mechanical stability
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies



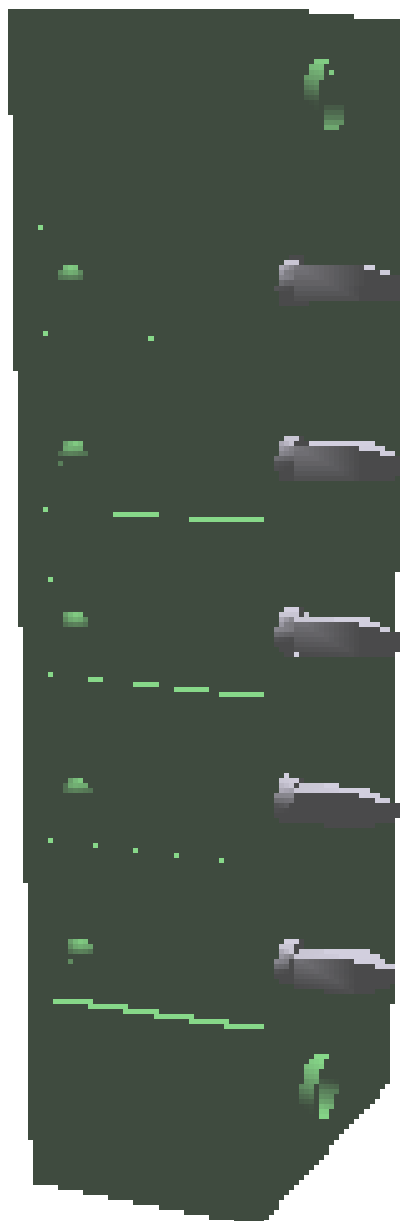
Make sure you always use the latest documentation.  
It can be downloaded at: [phoenixcontact.net/product/1924114](https://phoenixcontact.net/product/1924114)

**3 Table of contents**

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1924114 MSTB 2,5 HC/ 5-GF-5,08

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



**1924114 MSTB 2,5 HC/ 5-GF-5,08****5 General Technical Data****5.1 item properties**

|                                                  |                        |
|--------------------------------------------------|------------------------|
| Order No.                                        | 1924114                |
| Type                                             | MSTB 2,5 HC/ 5-GF-5,08 |
| Connector system                                 | POWER COMBICON 2,5     |
| Product type                                     | PCB header             |
| Type of contact                                  | Male connector         |
| Range of articles                                | MSTB 2,5 HC/...-GF     |
| 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                      |
| Type                                             | Standard               |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****6 Mounting****6.1 Flange mounting**

|                 |                 |
|-----------------|-----------------|
| Type of locking | Screw locking   |
| Mounting flange | Threaded flange |
| Torque          | 0.3 Nm          |

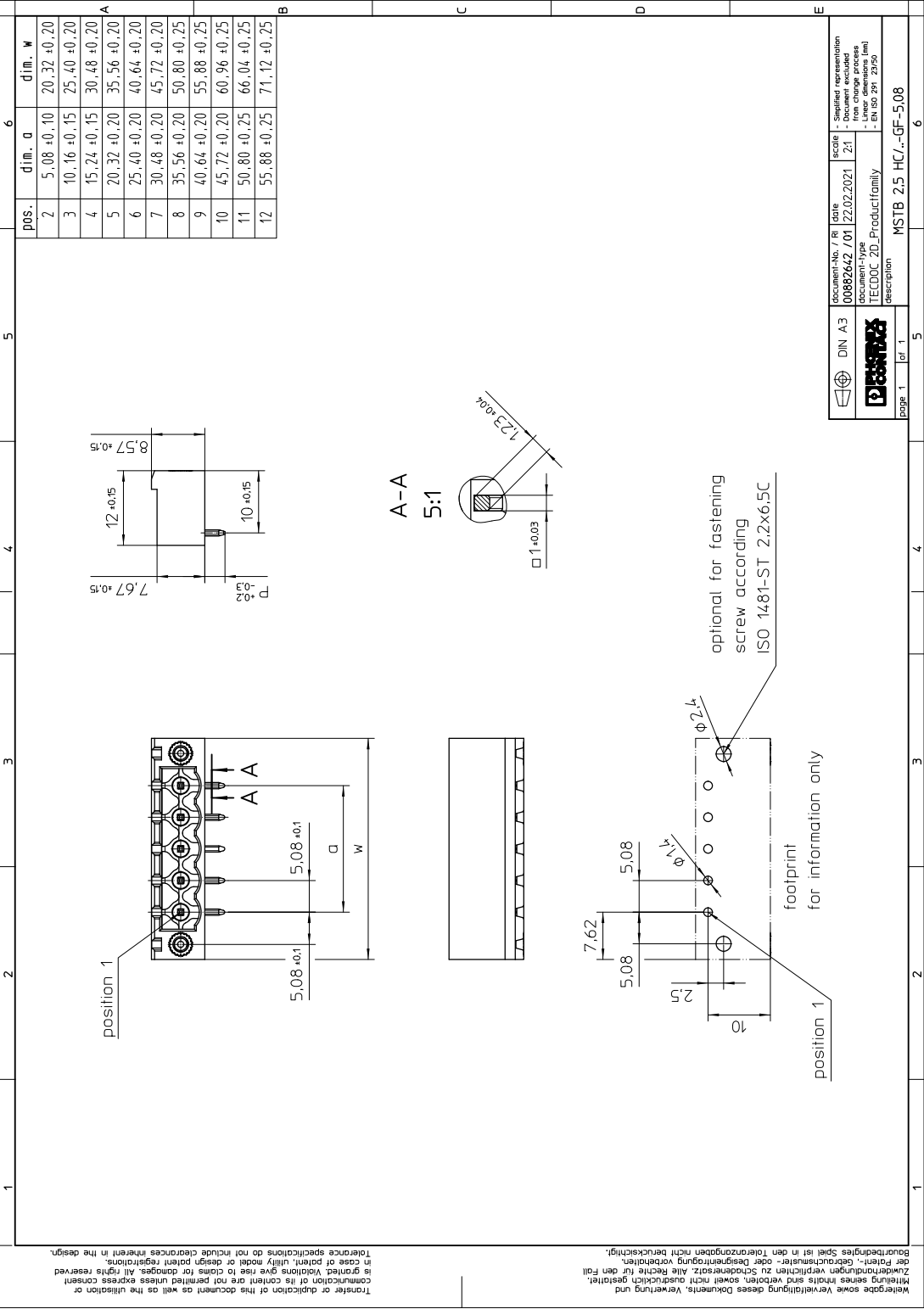
**7 Material properties****7.1 Material of metal parts**

|                                                                   |                                                                         |
|-------------------------------------------------------------------|-------------------------------------------------------------------------|
| 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                                               | 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                                                                  |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****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



**1924114 MSTB 2,5 HC/ 5-GF-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 information**

|                      |                     |
|----------------------|---------------------|
| Type of packaging    | packed in cardboard |
| Pieces per package   | 50                  |
| Outer packaging type | Carton              |

**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) |



**1924114 MSTB 2,5 HC/ 5-GF-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<br>Requirements >20 N | Test passed            |
| Specification                                  | IEC 60512-15-1:2008-05 |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****14 Insertion and withdrawal forces**

Insertion and withdrawal force

Test passed

Specification

IEC 60512-13-2:2006-02

No. of cycles

50

Insertion strength per pos. approx.

6 N

Withdraw strength per pos. approx.

5 N

**1924114 MSTB 2,5 HC/ 5-GF-5,08****15 Electrical tests**

|                                         |                            |
|-----------------------------------------|----------------------------|
| Rated current / conductor cross section | 16 A / 2.5 mm <sup>2</sup> |
| Rated insulation voltage (III/2)        | 320 V                      |
| Rated surge voltage (III/2)             | 4 kV                       |
| Contact resistance                      | 1 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                                         | 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                | 1.6 mm | 3.2 mm |

## 1924114 MSTB 2,5 HC/ 5-GF-5,08

## 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

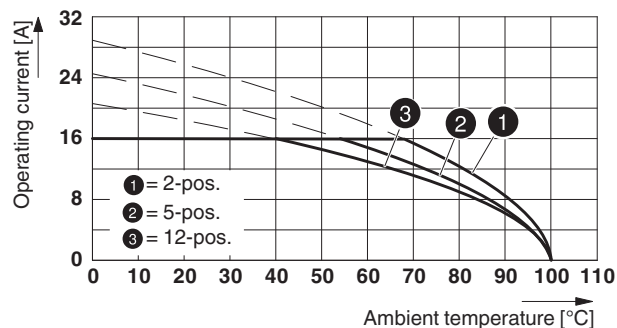
Reduction factor

0.8

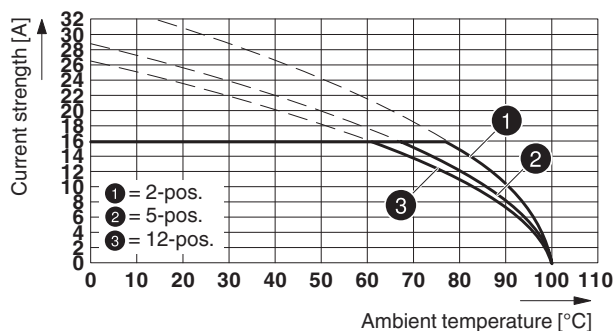
Conductor cross section

2.5 mm<sup>2</sup>

Type: FKC 2,5 HC/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: MSTB 2,5 HC/...-STF-5,08 with MSTB 2,5 HC/...-GF-5,08



**1924114 MSTB 2,5 HC/ 5-GF-5,08****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                |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****18 Approvals / Certificates**

|                                                                                                          |                |                |                        |                                     |
|----------------------------------------------------------------------------------------------------------|----------------|----------------|------------------------|-------------------------------------|
| IECEE CB Scheme         | Voltage<br>[V] | Current<br>[A] | Cross section<br>[AWG] | Cross section<br>[mm <sup>2</sup> ] |
|                                                                                                          | 250 V          | 16 A           | -                      | -                                   |
| EAC                     |                |                |                        |                                     |
| VDE Zeichengenehmigung  | Voltage<br>[V] | Current<br>[A] | Cross section<br>[AWG] | Cross section<br>[mm <sup>2</sup> ] |
|                                                                                                          | 250 V          | 16 A           | -                      | -                                   |
| cULus Recognized        | Voltage<br>[V] | Current<br>[A] | Cross section<br>[AWG] | Cross section<br>[mm <sup>2</sup> ] |
| <b>Usegroup B</b>                                                                                        |                |                |                        |                                     |
|                                                                                                          | 300 V          | 16 A           | -                      | -                                   |
| <b>Usegroup D</b>                                                                                        |                |                |                        |                                     |
|                                                                                                          | 300 V          | 10 A           | -                      | -                                   |
| VDE Zeichengenehmigung  | Voltage<br>[V] | Current<br>[A] | Cross section<br>[AWG] | Cross section<br>[mm <sup>2</sup> ] |
|                                                                                                          | 250 V          | 16 A           | -                      | -                                   |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****19 Commercial Data**

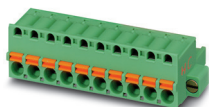
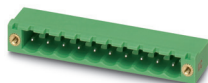
|                    |                                                      |
|--------------------|------------------------------------------------------|
| Order No.          | 1924114                                              |
| Type               | MSTB 2,5 HC/ 5-GF-5,08                               |
| Pieces per package | 50                                                   |
| Net weight         | 2.89 g                                               |
| GTIN               | 4017918600082                                        |
|                    | Information that applies locally, see link on page 1 |
|                    | Information that applies locally, see link on page 1 |

**20 corresponding plugs**

| Order No. | Type                      |
|-----------|---------------------------|
| 1912210   | MSTB 2,5 HC/ 5-STF-5,08   |
| 1912650   | MVSTBR 2,5 HC/ 5-STF-5,08 |
| 1913099   | MVSTBW 2,5 HC/ 5-STF-5,08 |
| 1942510   | FKC 2,5 HC/ 5-STF-5,08    |

**21 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                  |

**1924114 MSTB 2,5 HC/ 5-GF-5,08****22 Combination tests****MSTB 2,5 HC/...-GF****FKC 2,5 HC/...-STF****MSTB 2,5 HC/...-STF**

IEC 61984

IEC 61984

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

approx. 6 N / 5 N

approx. 5 N / 4 N

Polarization when inserted  
Requirement >20 N

Test passed

Test passed

Contact holder in insert  
Requirements >20 N

Test passed

Test passed

**Durability tests (B)**Contact resistance  $R_1$  1st level1 m $\Omega$ 0.6 m $\Omega$ Contact resistance  $R_1$  2nd level

Insertion/withdrawal cycles

50

25

Contact resistance  $R_2$ 1 m $\Omega$ 0.9 m $\Omega$ Rated impulse voltage at sea level  
Voltage waveform  $\geq$  (1.2/50  $\mu$ s)

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

**Thermal tests (C)**

Tested number of positions

12

12

Tested conductor cross section

2.5 mm<sup>2</sup>2.5 mm<sup>2</sup>

Test current

16 A DC

16 A

Upper limiting temperature  
Requirements < 100°C

Test passed

Test passed

**Climatic tests (D)**

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

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 cycle0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycleRated impulse voltage at sea level  
Voltage waveform  $\geq$  (1.2/50  $\mu$ s)

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

**Environmental and endurance tests (E)**

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20  
test fingerFinger safety with IP20  
test finger