

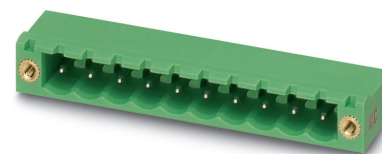
Data sheet

2021-05-19
Product version 03
Document revision 01

Order No.: 1924185

Type: MSTB 2,5 HC/12-GF-5,08

PCB header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 12 | • Nominal current | 16 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

- ✓ 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



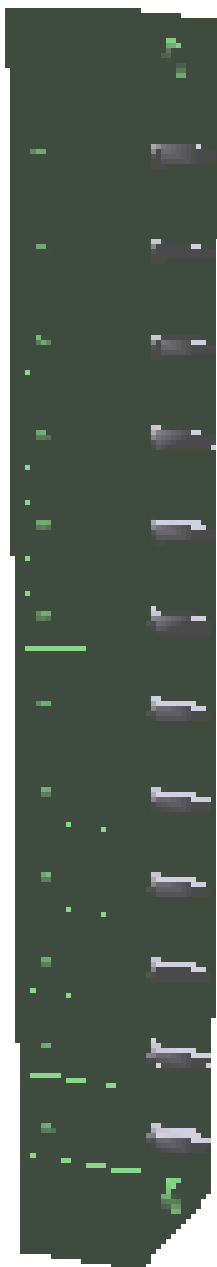
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1924185

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1924185 MSTB 2,5 HC/12-GF-5,08

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



1924185 MSTB 2,5 HC/12-GF-5,08**5 General Technical Data****5.1 item properties**

Order No.	1924185
Type	MSTB 2,5 HC/12-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	12
Number of levels	1
Number of connections	12
Number of potentials	12
Mounting type	Wave soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

1924185 MSTB 2,5 HC/12-GF-5,08**6 Mounting****6.1 Flange mounting**

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

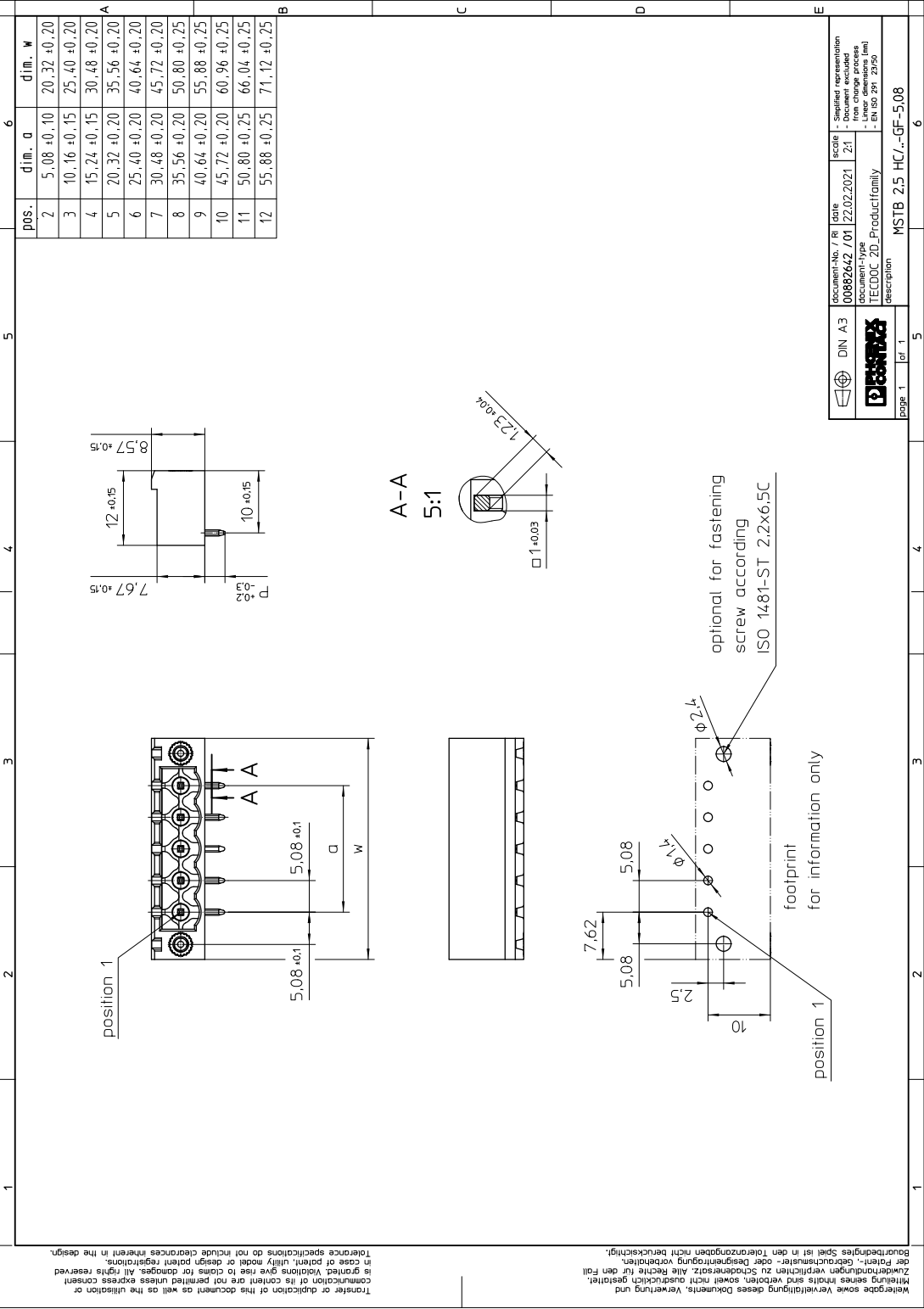
7 Material properties**7.1 Material of metal parts**

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

1924185 MSTB 2,5 HC/12-GF-5,08**8 Dimensions****8.1 Dimensions for the product**

Length	12 mm
Width	71.12 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm

9 Series drawing



1924185 MSTB 2,5 HC/12-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

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)

1924185 MSTB 2,5 HC/12-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 Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

1924185 MSTB 2,5 HC/12-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

1924185 MSTB 2,5 HC/12-GF-5,08**15 Electrical tests**

Rated current / conductor cross section	16 A / 2.5 mm ²
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

1924185 MSTB 2,5 HC/12-GF-5,08**16 Current carrying capacity/derating curves**

Specification

IEC 61984:2008-10

Note

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

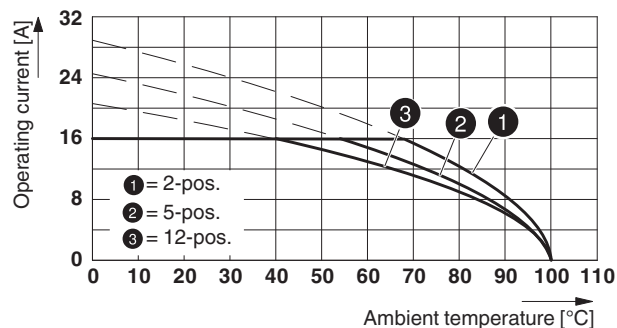
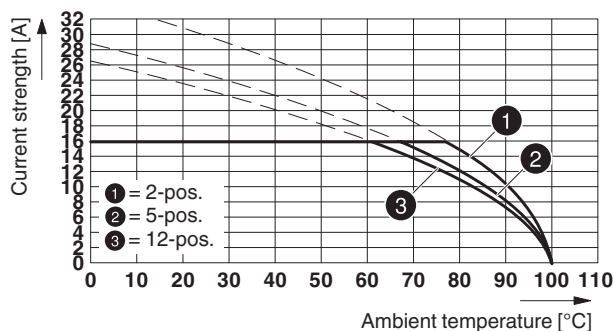
Note

For number of positions, see diagram

Reduction factor

0.8

Conductor cross section

2.5 mm²**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**

1924185 MSTB 2,5 HC/12-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

1924185 MSTB 2,5 HC/12-GF-5,08**18 Approvals / Certificates**

IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	16 A	-	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	16 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	16 A	-	-
Usegroup D				
	300 V	10 A	-	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	16 A	-	-

1924185 MSTB 2,5 HC/12-GF-5,08**19 Commercial Data**

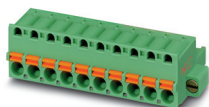
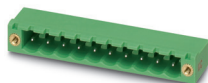
Order No.	1924185
Type	MSTB 2,5 HC/12-GF-5,08
Pieces per package	50
Net weight	4.594 g
GTIN	4017918600150
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

20 corresponding plugs

Order No.	Type
1912281	MSTB 2,5 HC/12-STF-5,08
1912728	MVSTBR 2,5 HC/12-STF-5,08
1913167	MVSTBW 2,5 HC/12-STF-5,08
1942581	FKC 2,5 HC/12-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

1924185 MSTB 2,5 HC/12-GF-5,08**22 Combination tests****MSTB 2,5 HC/12-GF****FKC 2,5 HC/12-STF****MSTB 2,5 HC/12-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 Ω 0.6 m Ω Contact resistance R_1 2nd level

Insertion/withdrawal cycles

50

25

Contact resistance R_2 1 m Ω 0.9 m Ω 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 $\geq (50/60 \text{ Hz})$

2.21 kV

2.21 kV

Thermal tests (C)

Tested number of positions

12

12

Tested conductor cross section

2.5 mm²2.5 mm²

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 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

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

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