

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: blue, nominal current: 16 A (see derating curve), rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: MSTBT 2,5 HC/...-STP, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5 HC, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Orthogonal plug-in screw connection
- Internationally recognized and proven screw connection

## Commercial data

Item number	1009166
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AC08
Product key	ACHADB
GTIN	4055626481920
Weight per piece (including packing)	6.587 g
Weight per piece (excluding packing)	6.587 g
Customs tariff number	85366990
Country of origin	DE

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Technical data

### Product properties

Product type	PCB connector
Product family	MSTBT 2,5 HC/...-STP
Product line	COMBICON Connectors M
Type	Standard
Number of positions	4
Pitch	5 mm
Number of connections	4
Number of rows	1
Number of potentials	4

### Electrical properties

Nominal current $I_N$	16 A (see derating curve)
Nominal voltage $U_N$	250 V
Contact resistance	1.2 mΩ
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Rated voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV

### Connection data

#### Connection technology

Type	Standard
Connector system	COMBICON MSTB 2,5 HC
Nominal cross section	2.5 mm <sup>2</sup>
Contact connection type	Socket

#### Interlock

Locking type	without
Mounting flange	without

#### Conductor connection

Connection method	Screw connection with tension sleeve
Conductor/PCB connection direction	0 °
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

2 conductors with same cross section, solid	0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / 2.4 mm
Stripping length	7 mm
Tightening torque	0.5 Nm ... 0.6 Nm

## Material specifications

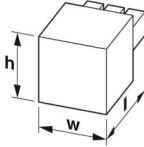
### Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	hot-dip tin-plated
Metal surface terminal point (top layer)	Tin (4 - 8 µm Sn)
Metal surface contact area (top layer)	Tin (4 - 8 µm Sn)

### Material data - housing

Color (Housing)	blue (5015)
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

## Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	20 mm
Height [h]	15 mm
Length [l]	18.1 mm

## Notes

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.
--------------------	--

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Safety note

Safety note	WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.
	• WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.
	• WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.
	• The item is intended to be an unencapsulated plug for installation in a housing.
	• Operate the connector only when it is fully plugged in.

## Mechanical tests

### Test for conductor damage and slackening

Specification	IEC 60999-1:1999-11
Result	Test passed

### Pull-out test

Specification	IEC 60999-1:1999-11
Conductor cross section/conductor type/tractive force setpoint/actual value	0.2 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	2.5 mm <sup>2</sup> / solid / > 50 N
	2.5 mm <sup>2</sup> / flexible / > 50 N

### Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	11 N
Withdraw strength per pos. approx.	7 N

### Torque test

Specification	IEC 60999-1:1999-11
---------------	---------------------

### Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
Result	Test passed

### Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

## Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:2007-12
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

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance $R_1$	1.2 mΩ
Contact resistance $R_2$	1.23 mΩ
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 21 TΩ

### Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	1.0 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/3 cycles
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	3.1 kV

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 105 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 55 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	4

### Insulation resistance

Specification	IEC 60512-3-1:2002-02
---------------	-----------------------

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

Insulation resistance, neighboring positions	> 21 TΩ
--	---------

## Air clearances and creepage distances |

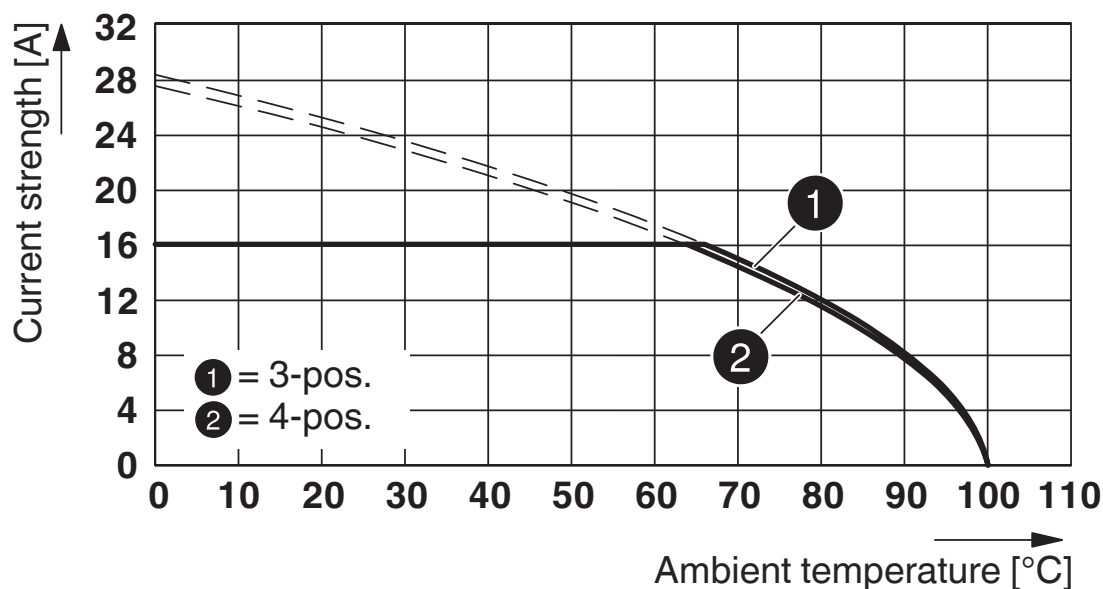
Specification	IEC 60664-1:2007-04
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
minimum clearance value - non-homogenous field (III/3)	3 mm
minimum creepage distance (III/3)	3.2 mm
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
minimum clearance value - non-homogenous field (III/2)	3 mm
minimum creepage distance (III/2)	1.6 mm
Rated insulation voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV
minimum clearance value - non-homogenous field (II/2)	3 mm
minimum creepage distance (II/2)	3.2 mm

## Packaging specifications

Type of packaging	packed in cardboard
-------------------	---------------------

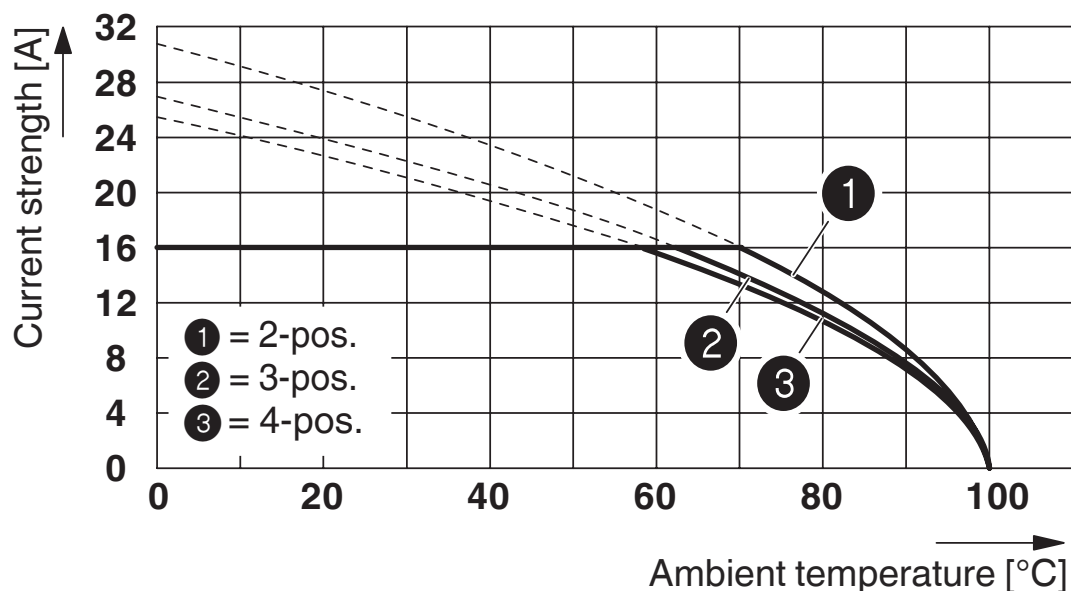
## Drawings

Diagram



Type: MSTBT 2,5 HC/...-STF with ICC20(25)-H/...L(R)5,0-...

Diagram



Derating curve for: MSTBT 2,5 HC/...-STP GY7035 with MSTBO 2,5/...-G1PL(R) GY7035

# MSTBT 2,5 HC/ 4-STP BU - PCB connector




1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1009166>

<div> <b>cULus Recognized</b> Approval ID: E60425-19931012</div>				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
Use group B				
	300 V	16 A	30 - 12	-



# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Classifications

### ECLASS

ECLASS-11.0	27460202
ECLASS-12.0	27460202
ECLASS-13.0	27460202

### ETIM

ETIM 9.0	EC002638
----------	----------

### UNSPSC

UNSPSC 21.0	39121400
-------------	----------

# MSTBT 2,5 HC/ 4-STP BU - PCB connector



1009166

<https://www.phoenixcontact.com/us/products/1009166>

## Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

Phoenix Contact 2024 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)