

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

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 terminal block, nominal current: 24 A, rated voltage (III/2): 400 V, nominal cross section: 2.5 mm<sup>2</sup>, number of potentials: 9, number of rows: 1, number of positions per row: 9, product range: SPT 2,5/..-H, pitch: 5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 2.5 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Clamping space opened by means of fixed screwdriver enables convenient conductor connection
- Operation and conductor connection from one direction enable integration into front of device
- Two solder pins reduce the mechanical strain on the soldering spots

## Commercial Data

Item number	1991040
Packing unit	50 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Product Key	AAMBFE
Catalog Page	Page 143 (C-1-2013)
GTIN	4046356104678
Weight per Piece (including packing)	11.358 g
Weight per Piece (excluding packing)	10.666 g
Customs tariff number	85369010
Country of origin	PL

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Technical Data

### Product properties

Product line	COMBICON Terminals M
Product type	Printed circuit board terminal
Number of positions	9
Pitch	5 mm
Number of connections	9
Number of rows	1
Number of potentials	9
Pin layout	Linear pinning
Solder pins per potential	2

### Electrical properties

Nominal current $I_N$	24 A
Nominal voltage $U_N$	400 V
Degree of pollution	3
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	400 V
Rated surge voltage (III/2)	4 kV

### Connection data

#### Connection technology

Nominal cross section	2.5 mm <sup>2</sup>
-----------------------	---------------------

#### Conductor connection

Connection method	Push-in spring connection
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 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> (Stripping length 8 mm)
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (Stripping length 8 mm)
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / -
Stripping length	10 mm

### Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

### Material specifications

Material data - contact

# PCB terminal block - SPT 2,5/ 9-H-5,0

1991040

<https://www.phoenixcontact.com/pc/products/1991040>

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 $\mu\text{m}$ Sn)
Metal surface soldering area (top layer)	Tin (4 - 8 $\mu\text{m}$ Sn)

## Material data - housing

Color (Housing)	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

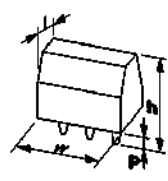
## Material data – actuating element

Color ()	()
----------	----

## Notes

Note on application	Rated insulation voltages with pitch spacer RZ-SPT-2,5-2,5: 400 V (III/3), 630 V (III/2), 1000 V (II/2) RZ-SPT-2,5-5,0: 630 V (III/3), 800 V (III/2), 1000 V (II/2)
---------------------	---

## Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	46.4 mm
Height [h]	16 mm
Length [l]	14.4 mm
Installed height	13.5 mm
Solder pin length [P]	2.5 mm

## PCB design

Pin spacing	5 mm
-------------	------

## Mechanical tests

### Connection test

Specification	IEC 60998-2-2:2002-12
---------------	-----------------------

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

Result	Test passed
--------	-------------

## Test for conductor damage and slackening

Specification	IEC 60998-2-2:2002-12
Result	Test passed

## Pull-out test

Specification	IEC 60998-2-2:2002-12
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
	4 mm <sup>2</sup> / solid / > 60 N
	2.5 mm <sup>2</sup> / flexible / > 50 N

## Electrical tests

### Temperature-rise test

Specification	IEC 60998-2-1:2002-12
Requirement temperature-rise test	Increase in temperature ≤ 45 K

### Insulation resistance

Specification	IEC 60998-1:2002-12
Insulation resistance, neighboring positions	10 <sup>9</sup> Ω

### 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)	400 V
Rated surge voltage (III/2)	4 kV
minimum clearance value - non-homogenous field (III/2)	3 mm
minimum creepage distance (III/2)	3 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

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:1995-03
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 Hz ... 60.1 Hz)

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

Sweep speed	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

## Glow-wire test

Specification	IEC 60998-1:2002-12
Temperature	850 °C
Time of exposure	5 s

## Ambient conditions

Ambient temperature (operation)	-40 °C ... 100 °C (Depending on the current carrying capacity/derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

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

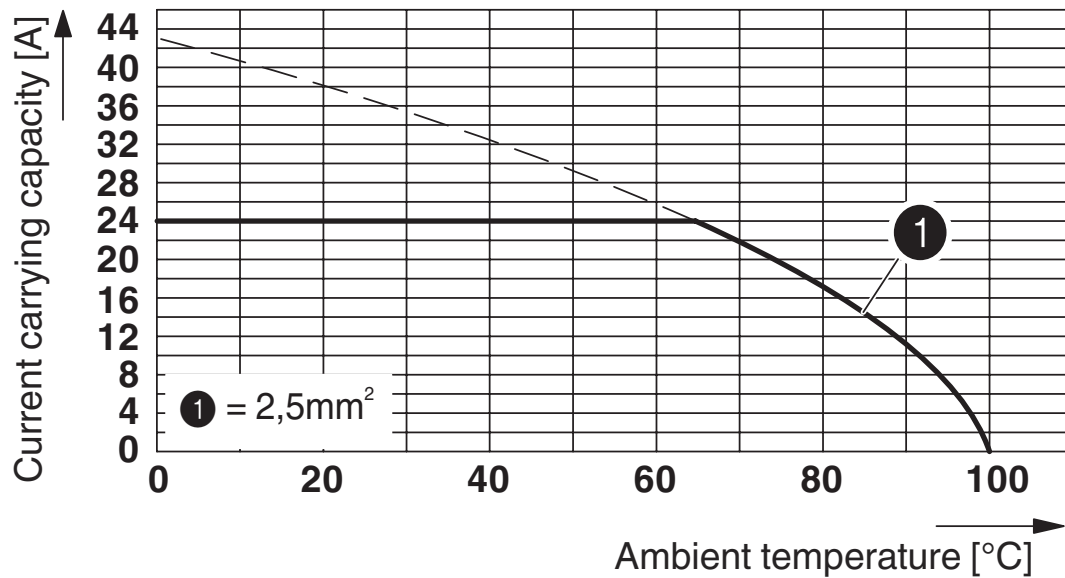
# PCB terminal block - SPT 2,5/ 9-H-5,0

1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Drawings

Diagram



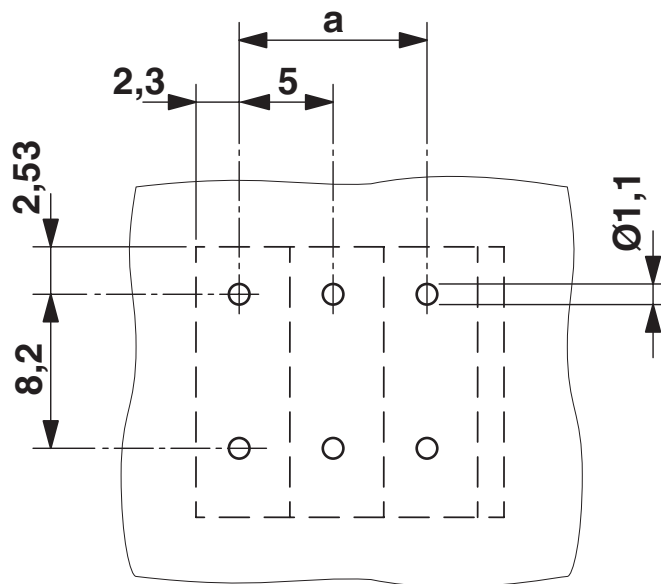
Type: SPT 2,5/5-H-5,0

Test following DIN EN 60512-5-2:2003-01

Reduction factor = 1

No. of positions: 5

Drilling plan/solder pad geometry



# PCB terminal block - SPT 2,5/ 9-H-5,0





1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Approvals

 <b>VDE Zeichengenehmigung</b> Approval ID: 40042909				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	400 V	32 A	-	0.2 - 4

 <b>EAC</b> Approval ID: B.01687				
--	--	--	--	--

 <b>cULus Recognized</b> Approval ID: E60425-20061129				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B	300 V	20 A	24 - 12	-
Use group C	150 V	20 A	24 - 12	-
Use group D	150 V	15 A	24 - 12	-

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Classifications

### ECLASS

ECLASS-9.0	27440401
ECLASS-10.0.1	27440401
ECLASS-11.0	27460101

### ETIM

ETIM 8.0	EC002643
----------	----------

### UNSPSC

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

# PCB terminal block - SPT 2,5/ 9-H-5,0



1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

# PCB terminal block - SPT 2,5/ 9-H-5,0

1991040

<https://www.phoenixcontact.com/pc/products/1991040>

## Accessories

### Screwdriver

Screwdriver - SZF 1-0,6X3,5 - 1204517

<https://www.phoenixcontact.com/pc/products/1204517>



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

---

### Crimping pliers

Crimping pliers - CRIMPFOX 6 - 1212034

<https://www.phoenixcontact.com/pc/products/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp

# PCB terminal block - SPT 2,5/ 9-H-5,0

1991040

<https://www.phoenixcontact.com/pc/products/1991040>



## Marker card

Marker card - SK 5/3,8:FORTL.ZAHLEN - 0804183

<https://www.phoenixcontact.com/pc/products/0804183>



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm

---

Phoenix Contact 2023 © - all rights reserved

<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8

D-32825 Blomberg

+49 (0) 5235-3 00

[info@phoenixcontact.com](mailto:info@phoenixcontact.com)