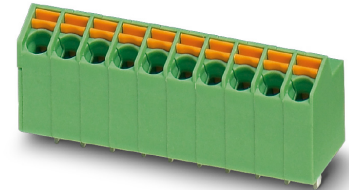


# Data sheet

Item No.: 1752104

Type: SPTA 1/ 2-3,5

PCB terminal block, Push-in spring connection



The figure shows the 10-position version

## 1 Main features



- |                           |                           |                        |                     |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos.             | 2                         | • Nominal current      | 9 A                 |
| • Conductor cross section | 1 mm <sup>2</sup>         | • Nominal voltage      | 200 V               |
| • Color                   | green (RAL 6021)          | • Connection direction | 65 °                |
| • Pitch                   | 3.5 mm                    | • Type of packaging    | packed in cardboard |
| • Connection method       | Push-in spring connection | • Mounting type        | Wave soldering      |

## 2 Your advantages

- ✓ Time saving push-in connection, tools not required
- ✓ Defined contact force ensures that contact remains stable over the long term
- ✓ Intuitive use through colour coded actuation lever
- ✓ Angled connection enables multi-row arrangement on the PCB
- ✓ Quick and convenient testing using integrated test option



Make sure you always use the latest documentation.

It can be downloaded at: [phoenixcontact.net/product/1752104](https://phoenixcontact.net/product/1752104)

**1752104 SPTA 1/ 2-3,5****3 Table of contents**

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



**1752104 SPTA 1/ 2-3,5****5 General Technical Data****5.1 item properties**

Item no.	1752104
Type	SPTA 1/ 2-3,5
Product line	COMBICON Terminals S
Product type	PCB terminal block
Range of articles	SPTA 1/
Pitch	3.5 mm
Number of positions	2
Number of rows	1
Number of connections	2
Number of potentials	2
Connection method	Push-in spring connection
Connection direction of the conductor to the PCB	65 °
Pin layout	Linear pinning
Solder pins per potential	1

**1752104 SPTA 1/ 2-3,5****6 Conductor connection****6.1 Connection capacity**

Conductor cross section, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Stripping length	8 mm

**6.2 Connection capacity AWG**

Conductor cross section AWG	24 ... 16
-----------------------------	-----------

**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
Terminal point surface	Tin (4 - 8 µm Sn)
Soldering area surface	Tin (4 - 8 µm Sn)
Surface characteristics	hot-dip tin-plated

**7.2 Material of plastic parts**

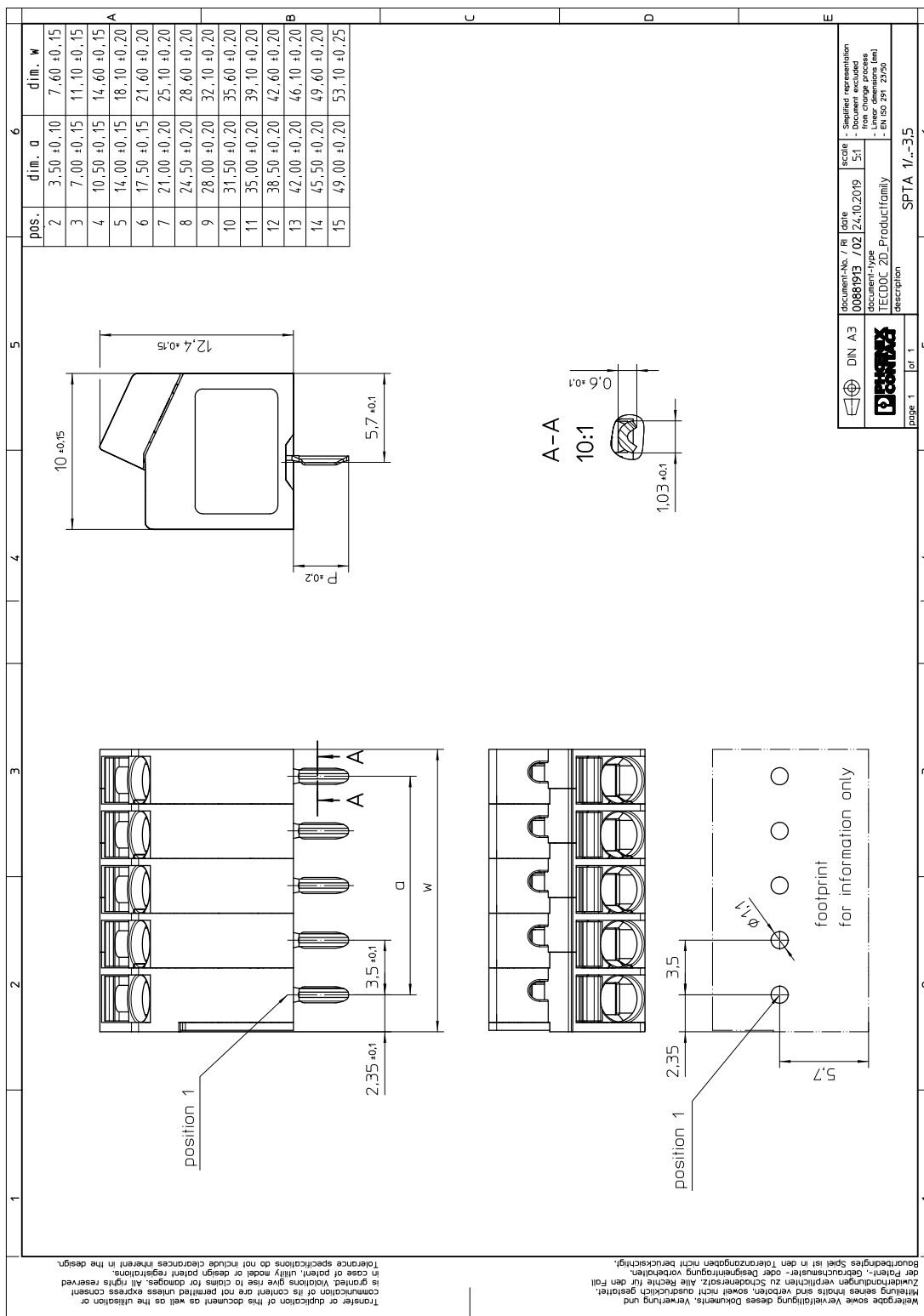
	Housing	Actuation element
Color	green (RAL 6021)	orange (RAL 2003)
Insulating material	PA	PBT
Insulating material group	I	IIIa
CTI according to IEC 60112	600	275
Flammability rating according to UL 94	V0	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850	
Glow wire ignition temperature GWIT according to EN 60695-2-13	775	
Temperature for the ball pressure test according to EN 60695-10-2	125 °C	

**1752104 SPTA 1/ 2-3,5****8 Dimensions****8.1 Dimensions for the product**

Length	10 mm
Width	7.6 mm
Height (without solder pin)	12.4 mm
Total height	15.9 mm
Solder pin [P]	3.5 mm

1752104 SPTA 1/ 2-3,5

9 Series drawing



## 1752104 SPTA 1/ 2-3,5

### 10 Product note

#### 10.1 Dimensions for PCB design

Hole diameter	1.1 mm
Pin dimensions	0.6 x 1 mm

### 11 Application

### 12 Packaging information

Type of packaging	packed in cardboard
Pieces per package	100

#### 12.1 Temperature limit values

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

**1752104 SPTA 1/ 2-3,5****13 Mechanical tests****13.1 Pull-out test**

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm <sup>2</sup> / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm <sup>2</sup> / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm <sup>2</sup> / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm <sup>2</sup> / flexible / > 40 N

**13.2 Check for damage to conductor or loosening**

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

**1752104 SPTA 1/ 2-3,5****14 Electrical tests**

Rated current / conductor cross section	9 A / 1 mm <sup>2</sup>
Rated insulation voltage (III/2)	200 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	0.98 mΩ
Degree of pollution	2

**14.1 Short-time withstand current test**

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Conductor cross section/short-time current	1.5 mm <sup>2</sup> / 72 A

**14.2 Aging test (climatic impact and corrosion testing)**

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Contact resistance R <sub>1</sub>	0.98 mΩ / 1.5 mm <sup>2</sup>
Test sequence 1: low temperature storage	-40 °C / 2 h
Test sequence 2: heat storage	168 h/105 °C
Test sequence 3: noxious gas storage (ISO 6988)	KFW 0.2 S/1 cycle
Contact resistance R <sub>2</sub>	0.96 mΩ / 1.5 mm <sup>2</sup>
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.2 kV

**14.3 Insulation resistance**

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

**14.4 Mechanical connection test for the PCB terminal block**

Specification	IEC 60947-7-4:2019-01
Result	Test passed

**14.5 Temperature rise test**

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Requirement temperature-rise test	The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature.
Conductor cross section/test current/temperature rise	1.5 mm <sup>2</sup> / 9 A / 12 K

**1752104 SPTA 1/ 2-3,5****15 Air and creepage distances**

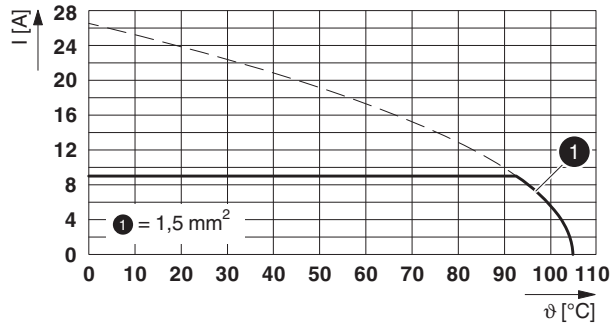
Component	PCB terminal block		
Specification	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	160 V	200 V	400 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	1.5 mm	1.5 mm	1.5 mm
Minimum value of the creepage path requirement in acc. with table	2 mm	1.5 mm	2 mm

## 1752104 SPTA 1/ 2-3,5

## 16 Current carrying capacity/derating curves

Specification	IEC 60947-7-4:2019-01
Note	Representation based on IEC 60512-5-2:2002-02
Reduction factor	1
Number of positions	4
Conductor cross section	1 mm <sup>2</sup>

Type: SPTA 1/...-3,5



**1752104 SPTA 1/ 2-3,5****17 Environmental and durability tests**





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 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
Note	

**17.1 Assessment of fire risk (glow wire test)**

Specification	IEC 60695-2-10:2013-04		
Result	Test passed		
Temperature	850 °C		
Time of exposure	5 s		

## 1752104 SPTA 1/ 2-3,5

## 18 Approvals / Certificates

IECEE CB Scheme 				
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	150 V	10 A	26 - 16	-
<b>Usegroup D</b>				
	300 V	10 A	26 - 16	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	-	9 A	-	0.2 - 1.5

**1752104 SPTA 1/ 2-3,5****19 Commercial Data**

Item no.	1752104
Type	SPTA 1/ 2-3,5
Pieces per package	100
Net weight	1.165 g
GTIN	4046356320955
	Information that applies locally, see link on page 1

**20 Accessories**

Description	Item No.	Type
Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip	1205037	SZS 0,4X2,5 VDE