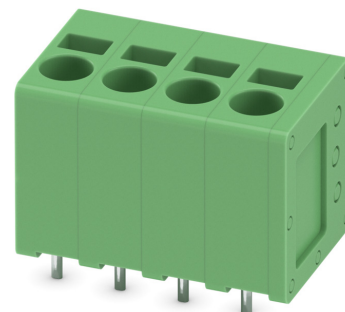


Data sheet

Item No.: 1991118

Type: SPT 2,5/ 4-V-5,0

Printed circuit board terminal, Push-in spring connection



1 Main features



• No. of pos.	4	• Nominal current	24 A
• Conductor cross section	2.5 mm ²	• Nominal voltage	400 V
• Color	green (RAL 6021)	• Connection direction	90 °
• Pitch	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
- ✓ 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



Make sure you always use the latest documentation.

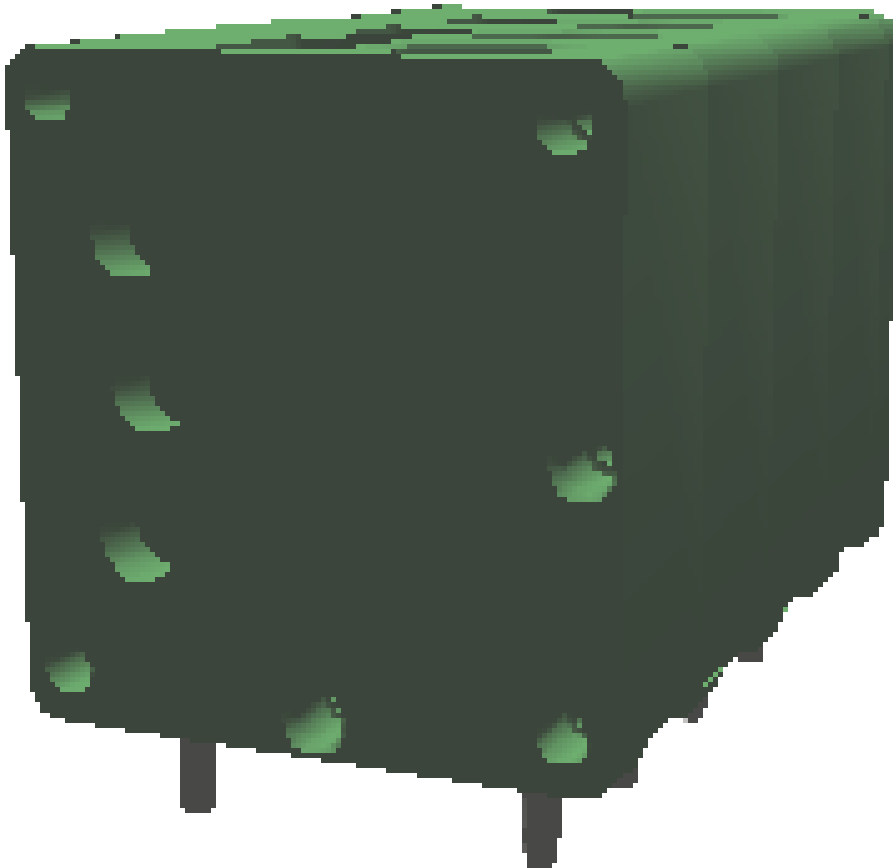
It can be downloaded at: phoenixcontact.com/product/1991118

1991118 SPT 2,5/ 4-V-5,0**3 Table of contents**

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1991118 SPT 2,5/ 4-V-5,0

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



1991118 SPT 2,5/ 4-V-5,0**5 General Technical Data****5.1 item properties**

Item no.	1991118
Type	SPT 2,5/ 4-V-5,0
Product line	COMBICON Terminals M
Product type	Printed circuit board terminal
Range of articles	SPT 2,5/..-V
Pitch	5 mm
Number of positions	4
Number of rows	1
Number of connections	4
Number of potentials	4
Connection method	Push-in spring connection
Connection direction of the conductor to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	2

1991118 SPT 2,5/ 4-V-5,0**6 Conductor connection****6.1 Connection capacity**

Conductor cross section, rigid	0.2 mm ² ... 4 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 2.5 mm ²
Stripping length	10 mm

6.2 Connection capacity AWG

Conductor cross section AWG	24 ... 12
-----------------------------	-----------

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	Tin-plated

7.2 Material of plastic parts

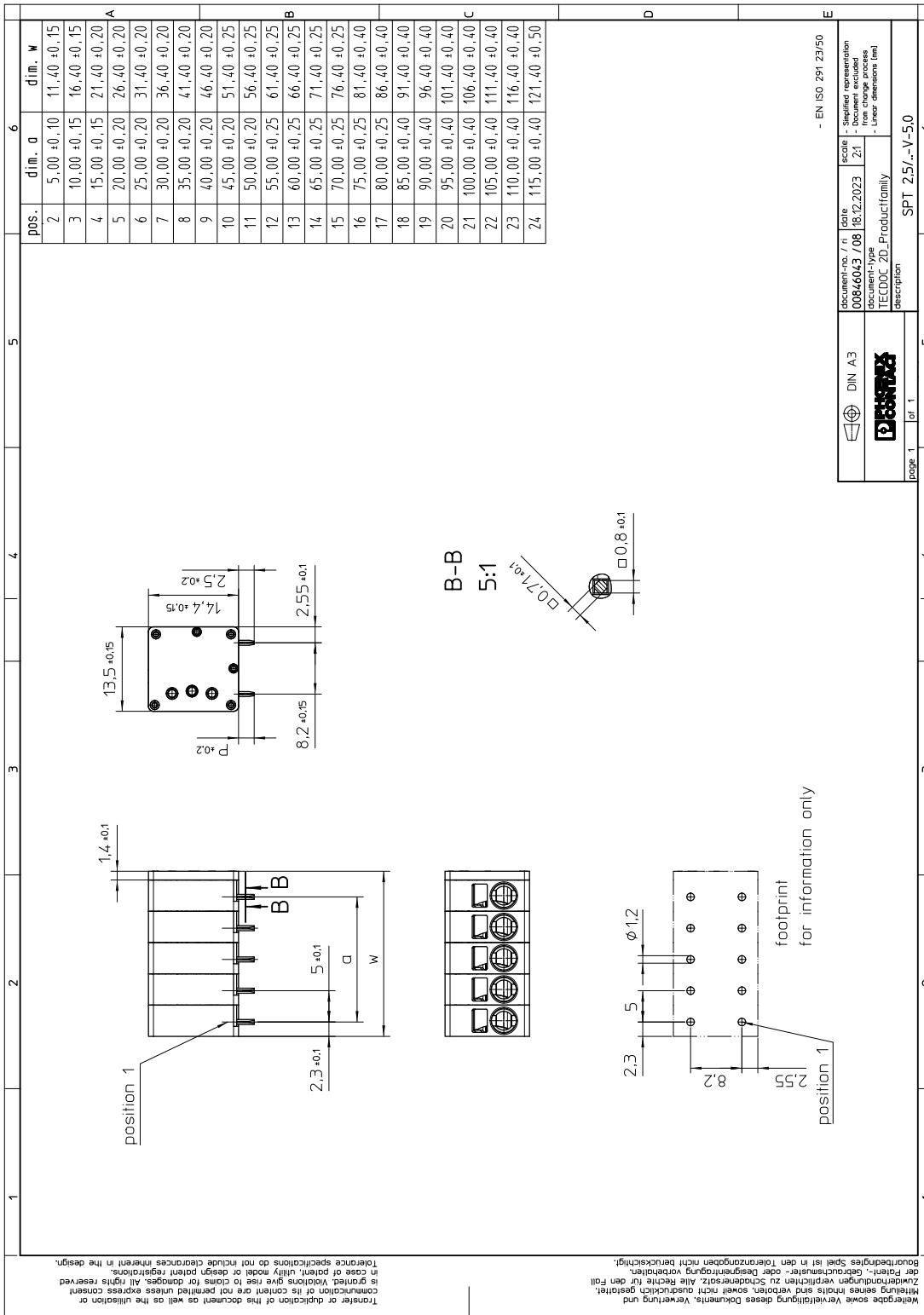
	Housing
Color	green (RAL 6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for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

1991118 SPT 2,5/ 4-V-5,0**8 Dimensions****8.1 Dimensions for the product**

Length	13.5 mm
Width	21.4 mm
Height (without solder pin)	14.4 mm
Total height	16.9 mm
Solder pin [P]	2.5 mm

1991118 SPT 2,5/ 4-V-5,0

9 Series drawing



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document-no. / n°	00846043 / 08	date	18.12.2023	scale	Z1
document-type	TECDOC 2D_Productfamily	description	SPT 2,5/-V-5,0		
- EN ISO 291:23/50 scale - Supplied representation - Reduced representation - Linear dimensions (mm)					

1991118 SPT 2,5/ 4-V-5,0

10 Product drawing

1	2	3	4	5	6												
A	B	C	D														
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<p>General Information - Simplified representation - Document excluded from change process - Linear dimensions (mm)</p> <table border="1" style="width: 100%;"> <tr> <td>document-No. / Ri</td> <td>date</td> <td>scale</td> </tr> <tr> <td>01055274 / 700</td> <td>22.02.2017</td> <td>1:1</td> </tr> <tr> <td>document-type</td> <td colspan="2">description</td> </tr> <tr> <td>TECDOC 2D_Productdrawing</td> <td colspan="2">SPT 2,5/ 4-V-5,0</td> </tr> </table> <p> DIN A3 </p> <p> page 1 of 1 </p>						document-No. / Ri	date	scale	01055274 / 700	22.02.2017	1:1	document-type	description		TECDOC 2D_Productdrawing	SPT 2,5/ 4-V-5,0	
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1991118 SPT 2,5/ 4-V-5,0**11 Product note****12 Application****Ferrules without insulating collar, according to DIN 46228-1**

Recommended crimping pliers	1212034 CRIMPFOX 6
-----------------------------	--------------------

Ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm ² ; Length: 7 mm Cross section: 0.34 mm ² ; Length: 7 mm Cross section: 0.5 mm ² ; Length: 8 mm Cross section: 0.75 mm ² ; Length: 8 mm Cross section: 1 mm ² ; Length: 8 mm Cross section: 1.5 mm ² ; Length: 8 mm Cross section: 2.5 mm ² ; Length: 8 mm
--	--

Ferrules with insulating collar, according to DIN 46228-4

Recommended crimping pliers	1212034 CRIMPFOX 6
-----------------------------	--------------------

Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.25 mm ² ; Length: 8 mm Cross section: 0.34 mm ² ; Length: 8 mm Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm Cross section: 0.75 mm ² ; Length: 8 mm ... 10 mm Cross section: 1 mm ² ; Length: 8 mm ... 10 mm Cross section: 1.5 mm ² ; Length: 8 mm ... 10 mm Cross section: 2.5 mm ² ; Length: 10 mm
---	---

13 Packaging specifications

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

Packing unit	120
--------------	-----

13.1 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)
---------------------------------	---

1991118 SPT 2,5/ 4-V-5,0**14 Mechanical tests****14.1 Pull-out test**

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	4 mm ² / solid / > 60 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / flexible / > 50 N

14.2 Check for damage to conductor or loosening

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

1991118 SPT 2,5/ 4-V-5,0**15 Electrical tests**

Rated current / conductor cross section	24 A / 2.5 mm ²
Rated insulation voltage (III/2)	400 V
Rated surge voltage (III/2)	4 kV
Contact resistance	0.33 mΩ
Degree of pollution	2

15.1 Short-time withstand current test

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Conductor cross section/short-time current	4 mm ² / 153.6 A

15.2 Aging test (climatic impact and corrosion testing)

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Contact resistance R ₁	0.33 mΩ / 4 mm ²
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	KFW 0.2 S/1 cycle
Contact resistance R ₂	0.31 mΩ / 4 mm ²
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	3.1 kV

15.3 Insulation resistance

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

15.4 Mechanical connection test for the PCB terminal block

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

15.5 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	4 mm ² / 32 A / 42.2 K
Conductor cross section/test current/temperature rise	2.5 mm ² / 24 A / 36.3 K

1991118 SPT 2,5/ 4-V-5,0**16 Air and creepage distances****16.1 1. Insulation coordination**

Application	without pitch spacer		
Component	Printed circuit board terminal		
Specification	IEC 60947-7-4:2019-01		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	250 V	400 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	3.2 mm	3 mm	3.2 mm

16.2 2. Insulation coordination

Application	with RZ-SPT 2,5-2,5		
Component	Printed circuit board terminal		
Specification	IEC 60947-7-4:2019-01		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	400 V	630 V	1000 V
Rated surge voltage	6 kV	6 kV	6 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	5.5 mm	5.5 mm	5.5 mm
Minimum value of the creepage path requirement in acc. with table	5.5 mm	5.5 mm	5.5 mm

16.3 3. Insulation coordination

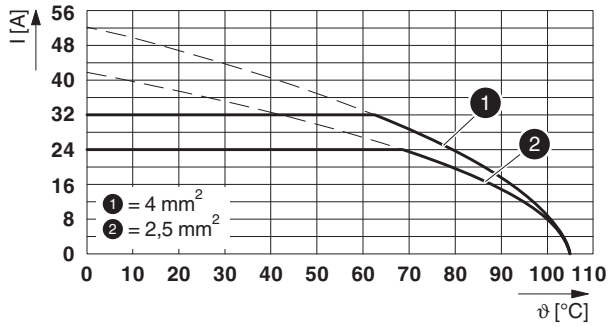
Application	with RZ-SPT 2,5-5,0		
Component	Printed circuit board terminal		
Specification	IEC 60947-7-4:2019-01		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	630 V	800 V	1000 V
Rated surge voltage	8 kV	8 kV	8 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	8 mm	8 mm	8 mm
Minimum value of the creepage path requirement in acc. with table	8 mm	8 mm	8 mm

1991118 SPT 2,5/ 4-V-5,0

17 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	2.5 mm ²

Type: SPT 2,5/...-V-5,0



1991118 SPT 2,5/ 4-V-5,0**18 Environmental and durability tests****18.1 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 Hz ... 60.1 Hz)
Acceleration	50 m/s ² (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	



18.2 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		

18.3 Touch protection

Specification	IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08 (following)
Back of the hand protection (Ball ø 50)	guaranteed
Finger protection (movable test finger)	guaranteed
Note	unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB

1991118 SPT 2,5/ 4-V-5,0**19 Approvals / Certificates**

VDE approval of drawings 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	400 V	32 A	-	0.2 - 4
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	20 A	24 - 12	-
Usegroup C				
	150 V	20 A	24 - 12	-
Usegroup D				
	150 V	15 A	24 - 12	-

1991118 SPT 2,5/ 4-V-5,0**20 Commercial Data**

Item no.	1991118
Type	SPT 2,5/ 4-V-5,0
Packing unit	120
Net weight	4.902 g
GTIN	4046356104739
	Information that applies locally, see link on page 1

21 Accessories

Description	Item No.	Type
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	1204517	SZF 1-0,6X3,5
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 ² ... 6.0 mm ² , lateral entry, trapezoidal crimp	1212034	CRIMPFOX 6
	0804183	SK 5/3,8:FORTL.ZAHLEN