2019-12-13
Product version 00
Document revision 00

Data sheet

Order No.: 1070999

Type: SPTAF 1/ 2-3,5-EL-EX

PCB terminal block, Push-in spring connection



The figure shows 10-pos. standard item (without EX marking)

1 Main features



- No. of pos. 2
- Conductor cross section 1.5 mm²
- Color green (6021)
- Pitch 3.5 mm
- Connection method Push-in spring connection
- Nominal current 16 A
- Nominal voltage 44 V
- Connection direction 45 °
- Type of packaging Tray

2 Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Finger-operated release button for very convenient operation
- Small component size for applications where space is at a premium
- Satisfies the more stringent safety requirements of “Ex eb” protection according to IEC 60079-7 for potentially explosive areas
- Quick and convenient testing using integrated test option

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1070999

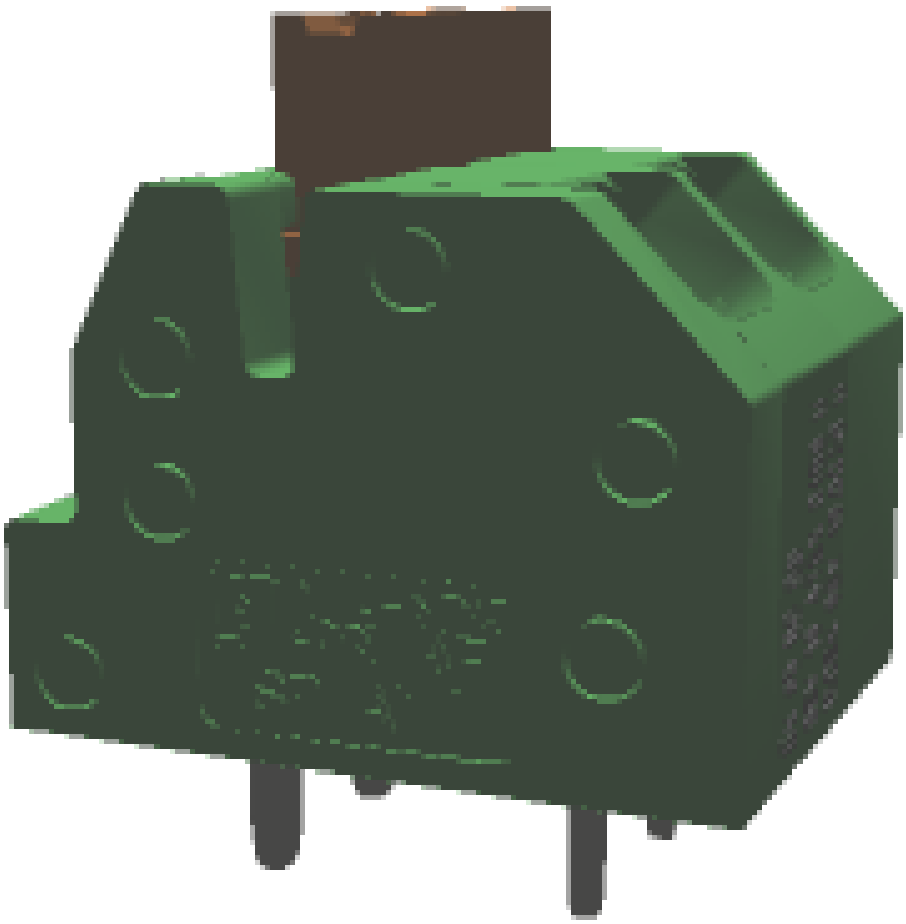
© PHOENIX CONTACT 2019

3 Table of contents

1 Main features ... 1
2 Your advantages ... 1
3 Table of contents ... 2
4 3D model in PDF can be activated (Acrobat Reader only) ... 3
5 General Technical Data ... 4
5.1 item properties ... 4
5.2 Connection capacity ... 4
5.3 Connection capacity AWG ... 4
6 Material properties ... 4
6.1 Material of metal parts ... 4
6.2 Material of plastic parts ... 4
7 Dimensions ... 6
7.1 Dimensions for the product ... 6
8 Series drawing ... 7
8.1 Dimensions for PCB design ... 8
9 Application ... 8
9.1 General information ... 8
10 Packaging information ... 8
10.1 Temperature limit values ... 8
11 Mechanical tests ... 9
11.1 Pull-out test ... 9
11.2 Check for damage to conductor or loosening ... 9
12 Electrical tests ... 10
12.1 Electrical data ... 10
12.2 Short-time withstand current test ... 10
12.3 Aging test (climatic impact and corrosion testing) ... 10
12.4 Mechanical connection test for the PCB terminal block ... 10
12.5 Temperature rise test ... 10
13 Current carrying capacity/derating curves ... 11
14 Environmental and durability tests ... 12
14.1 Vibration test ... 12
14.2 Assessment of fire risk (glow wire test) ... 12
14.3 Shock protection ... 12
15 Approvals ... 12
16 Commercial Data ... 13
17 Accessories ... 13

© PHOENIX CONTACT 2019

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



© PHOENIX CONTACT 2019

5 General Technical Data

5.1 item properties

Order No.	1070999
Type	SPTAF 1/ 2-3,5-EL-EX
Product type	PCB terminal block
Range of articles	SPTAF 1/..-EL-EX
Pitch	3.5 mm
Range of positions	2...18
Number of positions	2
Number of levels	1
Connection method	Push-in spring connection
Mounting type	Wave soldering
Connection direction of the conductor to the PCB	45 °
Pin layout	Linear pinning
Solder pins per potential	2

5.2 Connection capacity

Examination certificate	SEV 19 ATEX 0159 U
	0344 Ex II 2G Ex eb IIC T6...T1 Gb
IECEx certificate	IECEx SEV 19.0026U
Conductor cross section, solid	0.2 mm² ... 1.5 mm² (When connecting and possibly adjusting a solid conductor of 1.5 mm², the mechanical lateral forces, which can affect the terminal block, have to be absorbed by lateral support.)
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² ... 0.75 mm²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm² ... 0.75 mm²
Stripping length	8 mm

5.3 Connection capacity AWG

Conductor cross section AWG	24 ... 16

6 Material properties

6.1 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 (2 - 4 µm Sn)
Soldering area surface	Tin (2 - 4 µm Sn)
Surface characteristics	hot-dip tin-plated

6.2 Material of plastic parts

© PHOENIX CONTACT 2019

1070999 SPTAF 1/ 2-3,5-EL-EX

	Housing	Actuation element
Color	green (6021)	orange (2003)
Insulating material	PA	PBT
Insulating material group	I	
CTI according to IEC 60112	600	275
Flammability rating according to UL 94	V0	V0

© PHOENIX CONTACT 2019

7 Dimensions

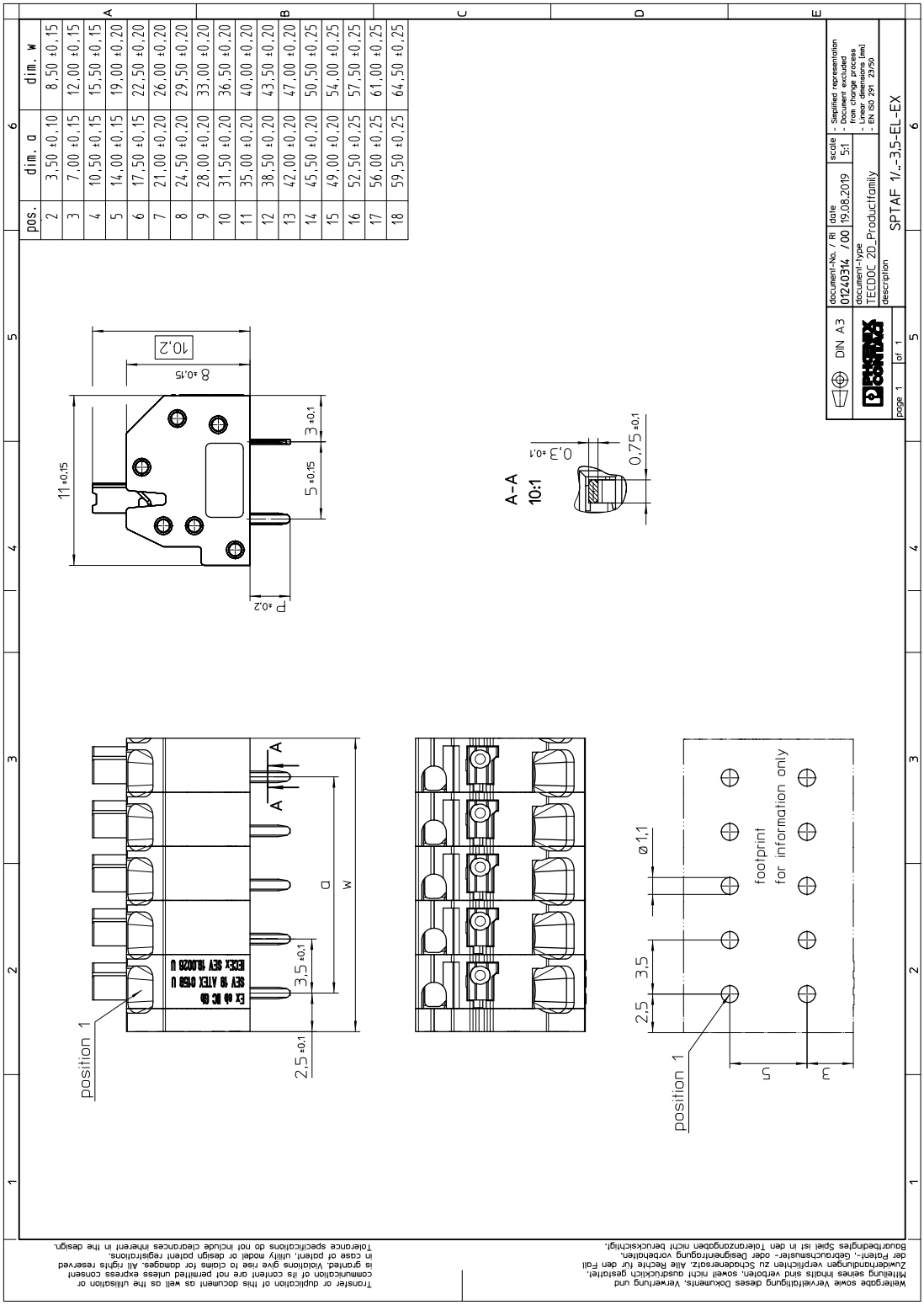
7.1 Dimensions for the product

Length	11 mm
Width	8.5 mm
Height (without solder pin)	10.2 mm
Total height	12.8 mm
Solder pin [P]	2.6 mm
Dimension a	3.5 mm

© PHOENIX CONTACT 2019

1070999 SPTAF 1/ 2-3,5-EL-EX

8 Series drawing



Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Designeintragung vorbehalten.
Transfer or duplication of this document as well as the utilisation or communication of its content are not permitted unless express consent is granted. Violations give rise to claims for damages. All rights reserved in case of patent, utility model or design patent registrations.
Tolerance specifications do not include clearances inherent in the design.

© PHOENIX CONTACT 2019

8.1 Dimensions for PCB design

Hole diameter	1.1 mm
Pin dimensions	0.75 x 0.3 mm

9 Application

9.1 General information

Note on application	Maximum permissible outer diameter of the wire insulation ≤ 3 mm

10 Packaging information

Type of packaging	Tray
Pieces per package	195

10.1 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

© PHOENIX CONTACT 2019

11 Mechanical tests

11.1 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	0.25 mm^2 / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm^2 / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm^2 / flexible / > 40 N

11.2 Check for damage to conductor or loosening

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

© PHOENIX CONTACT 2019

12 Electrical tests

12.1 Electrical data

Rated current / conductor cross section	16 A / 1.5 mm²
Rated insulation voltage (III/2)	
Rated surge voltage (III/2)	
Contact resistance	
Degree of pollution	2

12.2 Short-time withstand current test

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Conductor cross section/short-time current	1.5 mm² / 50.4 A

12.3 Aging test (climatic impact and corrosion testing)

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Contact resistance R_1	0.8 mΩ / 1.5 mm²
Test sequence 1: low temperature storage	-40 °C / 2 h
Test sequence 2: heat storage	168 h/100°C
Test sequence 3: noxious gas storage (ISO 6988)	KFW 0.2 S/1 cycle
Contact resistance R_2	0.9 mΩ / 1.5 mm²
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.4 kV

12.4 Mechanical connection test for the PCB terminal block

Specification	IEC 60947-7-4:2013-08
Result	Test passed

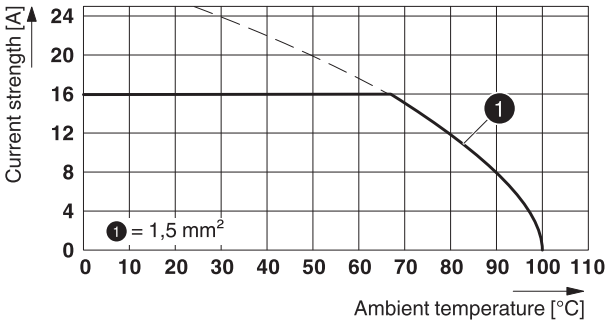
12.5 Temperature rise test

Specification	IEC 60947-7-4:2013-08
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 mm² / 16 A / 33.5 K

© PHOENIX CONTACT 2019

13 Current carrying capacity/derating curves

Type: SPTAF 1/...-3,5-IL(EL)



© PHOENIX CONTACT 2019

14 Environmental and durability tests

14.1 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)
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.

14.2 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		

14.3 Shock protection

Specification	IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08
Back of the hand protection (Ball ø 50)	guaranteed
Finger protection (movable test finger)	guaranteed
Note	

15 Approvals

© PHOENIX CONTACT 2019

16 Commercial Data

Order No.	1070999
Type	SPTAF 1/ 2-3,5-EL-EX
Pieces per package	195
Net weight	1.178 g
GTIN	4063151100667
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 Accessories

Description	Order No.	Type
Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.4 x 2.5 x 75 mm, 2-component grip, with non-slip grip	1204504	SZF 0-0,4X2,5
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

© PHOENIX CONTACT 2019

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

PHOENIX CONTACT:

1899414 2800865 3036424 3248125 0801422 0801820 0817028 1052345:0021 1619453 5435970
1539570 1712737 1778599 2800976 0800379 1407671 1956137 2905346 3241240 1442188 0818111
1604561 1674794 2838254 3210202 0828799 0808671:0311 1817440 3244449 0818153