2019-12-13
Product version 00
Document revision 00

Data sheet

Order No.: 1071003

Type: SPTAF 1/ 6-3,5-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. 6
- 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/1071003

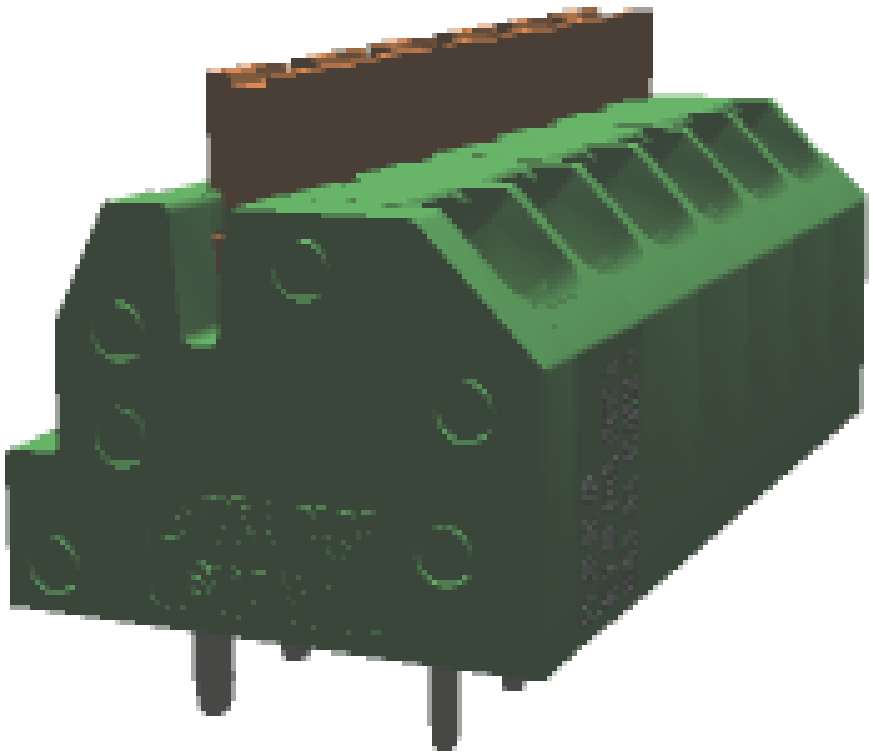
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4 3D model in PDF can be activated (Acrobat Reader only)



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5 General Technical Data

5.1 item properties

Order No.	1071003
Type	SPTAF 1/ 6-3,5-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	6
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

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1071003 SPTAF 1/ 6-3,5-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

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7 Dimensions

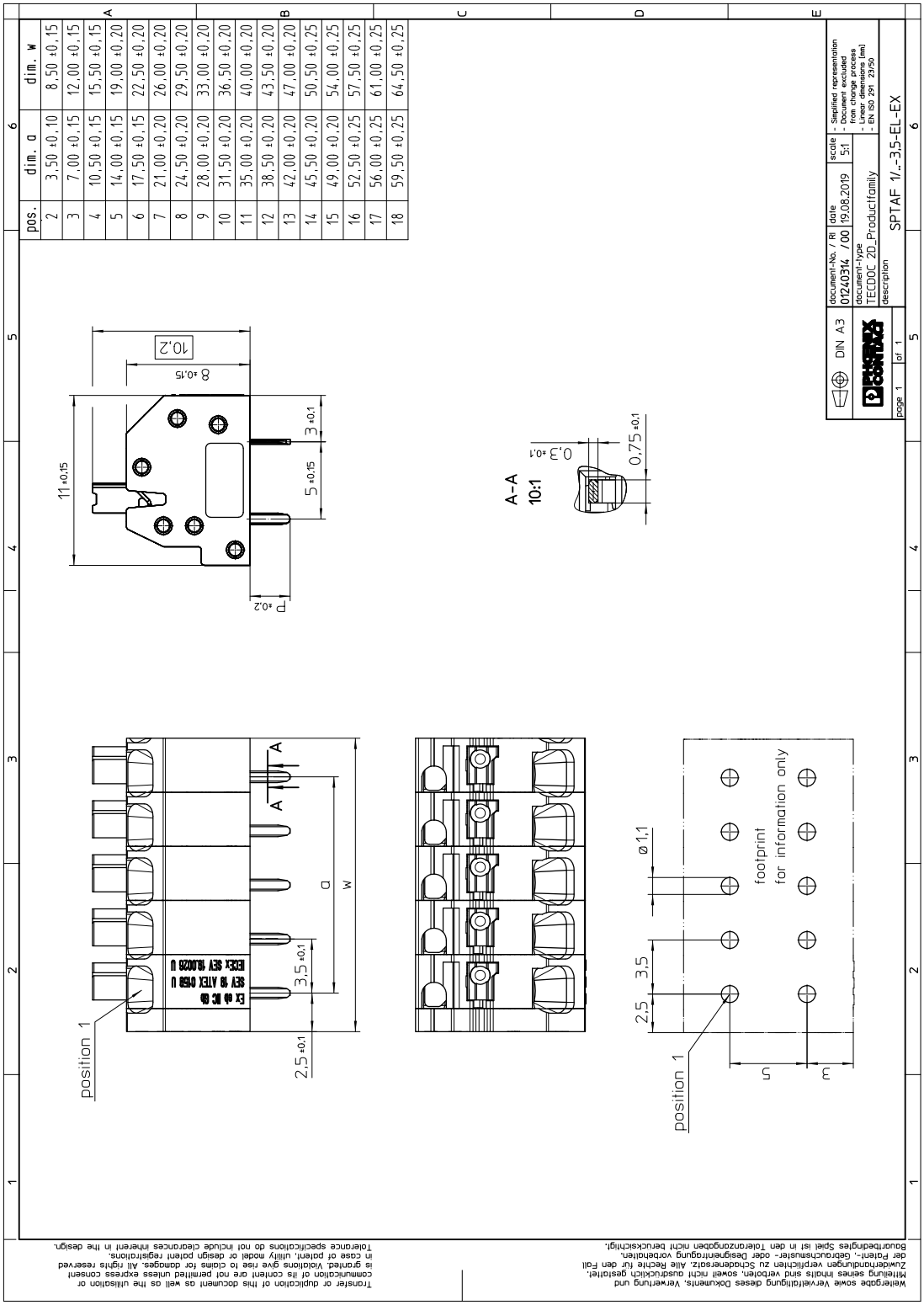
7.1 Dimensions for the product

Length	11 mm
Width	22.5 mm
Height (without solder pin)	10.2 mm
Total height	12.8 mm
Solder pin [P]	2.6 mm
Dimension a	17.5 mm

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1071003 SPTAF 1/ 6-3,5-EL-EX

8 Series drawing



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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	65

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

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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

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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

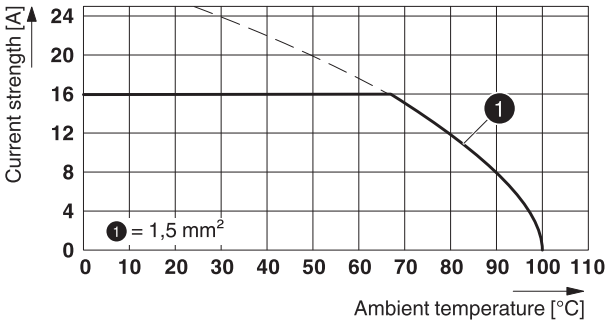
12.5 Temperature rise test

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

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13 Current carrying capacity/derating curves

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



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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

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16 Commercial Data

Order No.	1071003
Type	SPTAF 1/ 6-3,5-EL-EX
Pieces per package	65
Net weight	3.34 g
GTIN	4063151100704
	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

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