

Data sheet

Order No.: 1071009

Type: SPTAF 1/12-3,5-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. | 12 | • Nominal current | 16 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 44 V |
| • Color | green (6021) | • Connection direction | 45 ° |
| • Pitch | 3.5 mm | • Type of packaging | Tray |
| • Connection method | Push-in spring connection | | |

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/1071009

1071009 SPTAF 1/12-3,5-EL-EX**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

1071009 SPTAF 1/12-3,5-EL-EX

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



1071009 SPTAF 1/12-3,5-EL-EX**5 General Technical Data****5.1 item properties**

Order No.	1071009
Type	SPTAF 1/12-3,5-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	12
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 mm ² ... 1.5 mm ² (When connecting and possibly adjusting a solid conductor of 1.5 mm ² , the mechanical lateral forces, which can affect the terminal block, have to be absorbed by lateral support.)
Conductor cross section, flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 0.75 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 0.75 mm ²
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

1071009 SPTAF 1/12-3,5-EL-EX

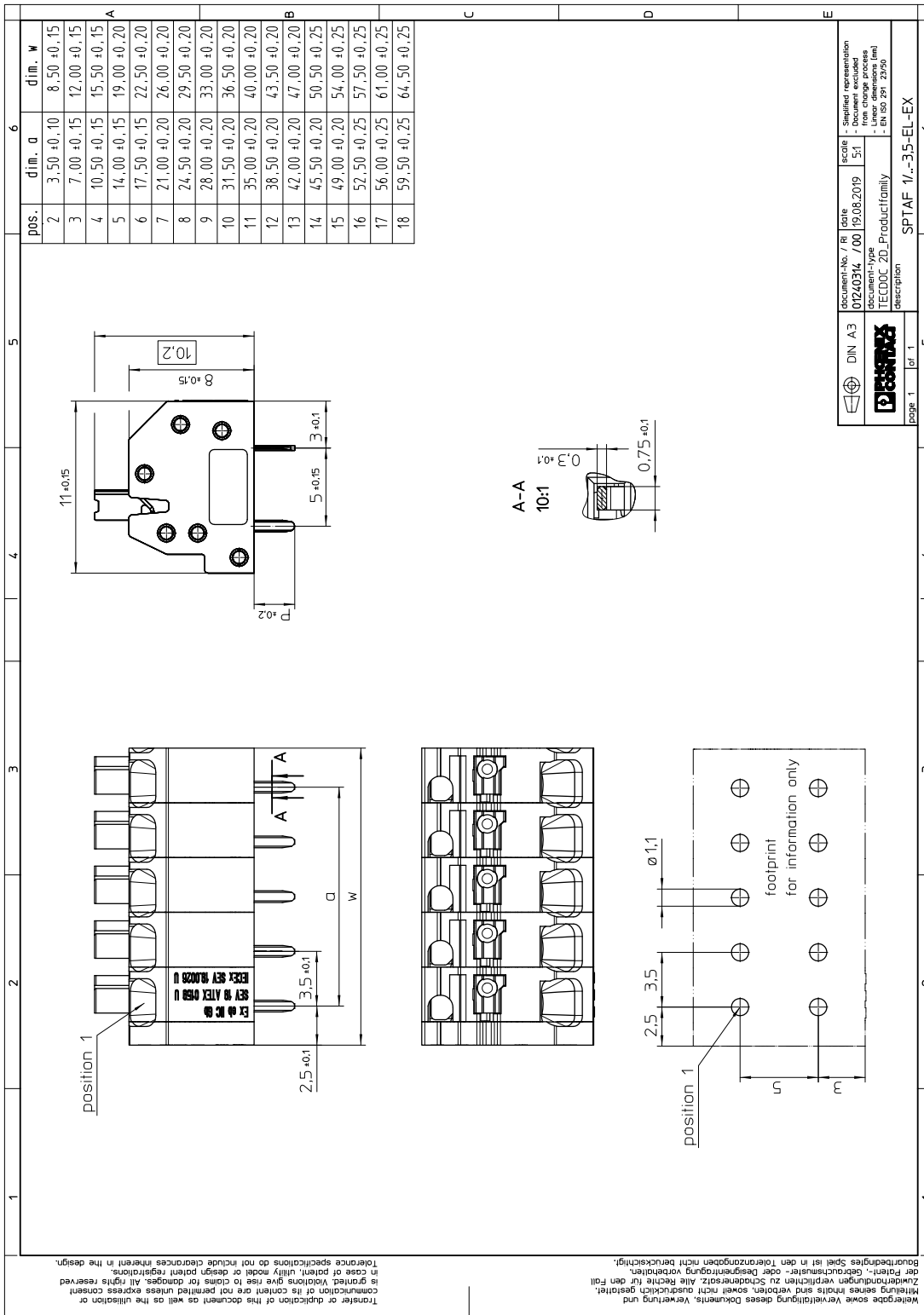
	Housing	Actuation element
Color	green (6021)	orange (2003)
Insulating material	PA	PBT
Insulating material group	I	
CTI according to IEC 60112	600	275
Flammability rating according to UL 94	V0	V0

1071009 SPTAF 1/12-3,5-EL-EX**7 Dimensions****7.1 Dimensions for the product**

Length	11 mm
Width	43.5 mm
Height (without solder pin)	10.2 mm
Total height	12.8 mm
Solder pin [P]	2.6 mm
Dimension a	38.5 mm

1071009 SPTAF 1/12-3,5-EL-EX

8 Series drawing



document-No. / R / title	01240314 / 700 / 19.08.2019	scale	1:1	Supplied representation
document-type	TECDOC 2D_Productfamily	document-No. / R / title	01240314 / 700 / 19.08.2019	Scale
description	SPTAF 1/-3,5-EL-EX	document-type	TECDOC 2D_Productfamily	document-No. / R / title
description	SPTAF 1/-3,5-EL-EX	document-type	TECDOC 2D_Productfamily	document-No. / R / title
description	SPTAF 1/-3,5-EL-EX	document-type	TECDOC 2D_Productfamily	document-No. / R / title

1071009 SPTAF 1/12-3,5-EL-EX**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	70

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

1071009 SPTAF 1/12-3,5-EL-EX**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

1071009 SPTAF 1/12-3,5-EL-EX**12 Electrical tests****12.1 Electrical data**

Rated current / conductor cross section	16 A / 1.5 mm ²
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 mm ² / 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 mm ²
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 mm ²
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

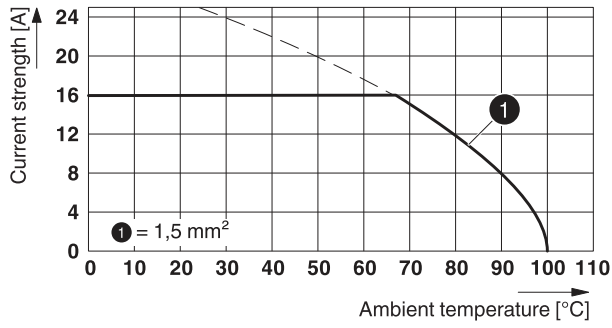
12.5 Temperature rise test

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 mm ² / 16 A / 33.5 K

1071009 SPTAF 1/12-3,5-EL-EX

13 Current carrying capacity/derating curves

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



1071009 SPTAF 1/12-3,5-EL-EX**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

1071009 SPTAF 1/12-3,5-EL-EX**16 Commercial Data**

Order No.	1071009
Type	SPTAF 1/12-3,5-EL-EX
Pieces per package	70
Net weight	5.71 g
GTIN	4063151100766
	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