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Product version 00
Document revision 00

# Data sheet

## Order No.: 1071000

## Type: SPTAF 1/ 3-3,5-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. 3
- 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/1071000

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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. | 1071000 |
| Type | SPTAF 1/ 3-3,5-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 | 3 |
| 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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## 1071000 SPTAF 1/ 3-3,5-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

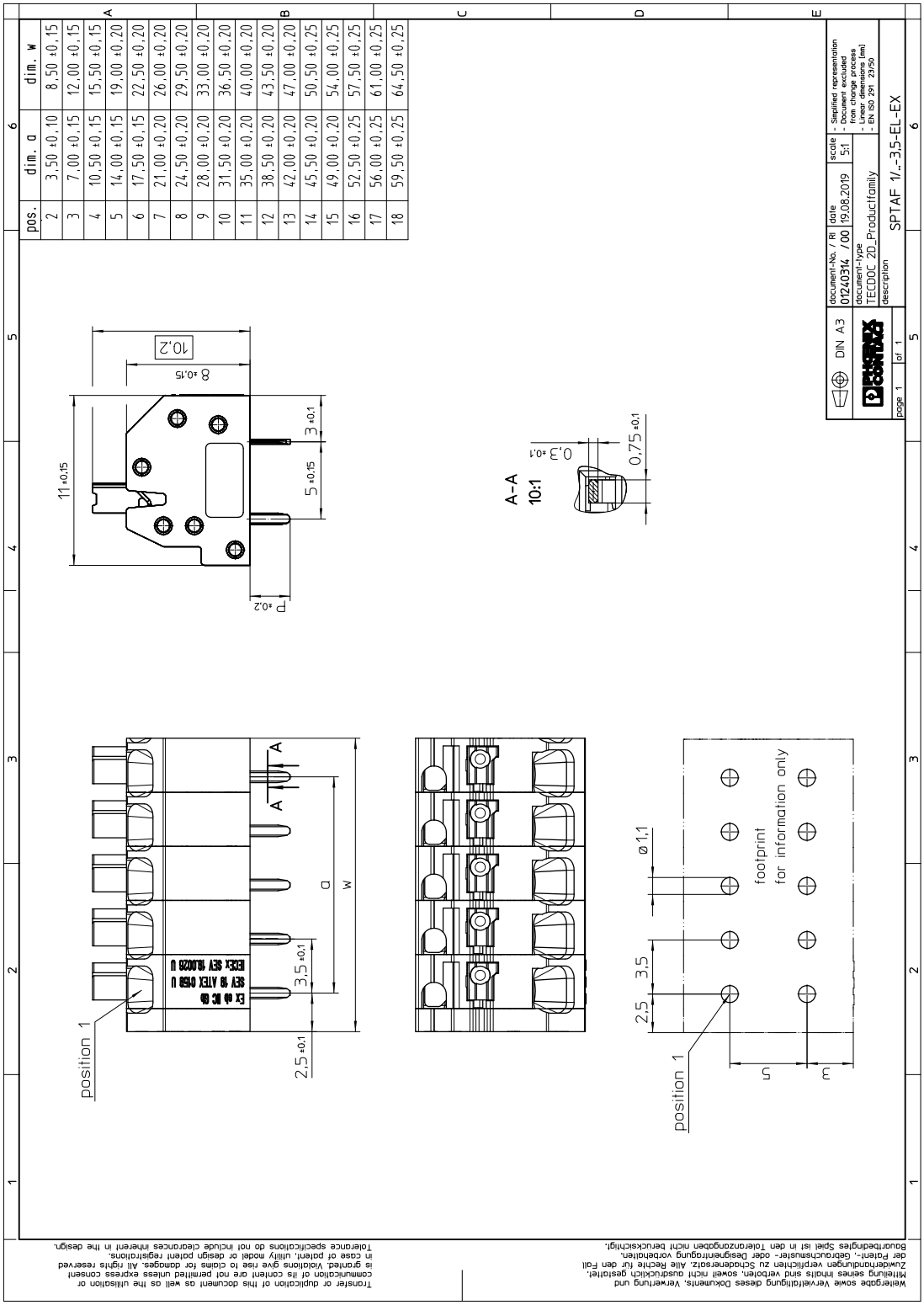
## 7.1 Dimensions for the product

| | |
|---|---|
| Length | 11 mm |
| Width | 12 mm |
| Height (without solder pin) | 10.2 mm |
| Total height | 12.8 mm |
| Solder pin [P] | 2.6 mm |
| Dimension a | 7 mm |

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**1071000 SPTAF 1/ 3-3,5-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 | 140 |

### 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 |

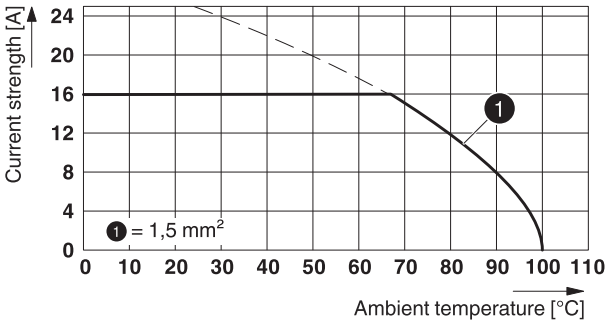
## 12.5 Temperature rise test

| | |
|---|---|
| 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. | 1071000 |
| Type | SPTAF 1/ 3-3,5-EL-EX |
| Pieces per package | 140 |
| Net weight | 1.674 g |
| GTIN | 4063151100674 |
| | 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 |

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