

Order No.: 1071074

Type: SPTAF 1/ 8-5,0-IL-EX

PCB terminal block, Push-in spring connection



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

## 1 Main features



- |                           |                           |                        |       |
|---------------------------|---------------------------|------------------------|-------|
| • No. of pos.             | 8                         | • Nominal current      | 16 A  |
| • Conductor cross section | 1.5 mm <sup>2</sup>       | • Nominal voltage      | 137 V |
| • Color                   | green (6021)              | • Connection direction | 45 °  |
| • Pitch                   | 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
- ✓ Intuitive use through colour coded actuation lever
- ✓ 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



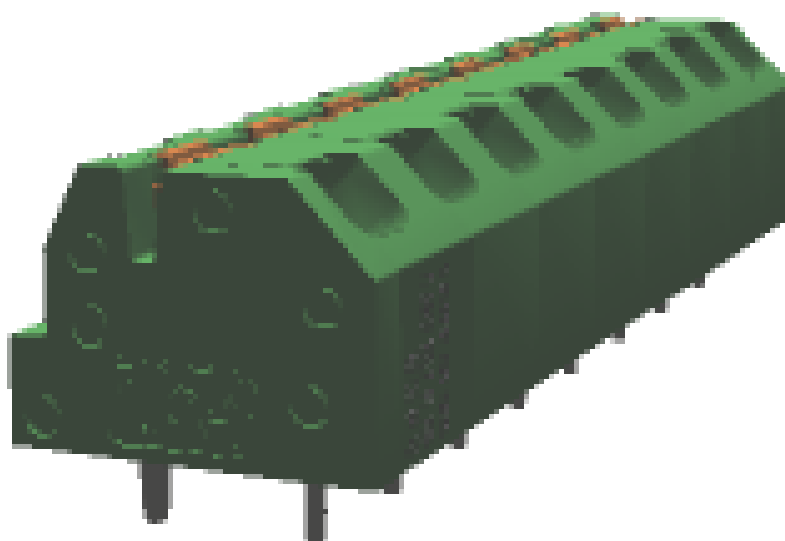
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4 3D model in PDF can be activated (Acrobat Reader only)



**1071074 SPTAF 1/ 8-5,0-IL-EX****5 General Technical Data****5.1 item properties**

|                                                  |                           |
|--------------------------------------------------|---------------------------|
| Order No.                                        | 1071074                   |
| Type                                             | SPTAF 1/ 8-5,0-IL-EX      |
| Product type                                     | PCB terminal block        |
| Range of articles                                | SPTAF 1/...-IL-EX         |
| Pitch                                            | 5 mm                      |
| Range of positions                               | 2...16                    |
| Number of positions                              | 8                         |
| 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 double 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 <sup>2</sup> ... 1.5 mm <sup>2</sup> (When connecting and possibly adjusting a solid conductor of 1.5 mm <sup>2</sup> , the mechanical lateral forces, which can affect the terminal block, have to be absorbed by lateral support.) |
| Conductor cross section, flexible                                     | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                                                                                                                                                                                                 |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>                                                                                                                                                                                               |
| Conductor cross section flexible, with ferrule with plastic sleeve    | 0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>                                                                                                                                                                                               |
| 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**

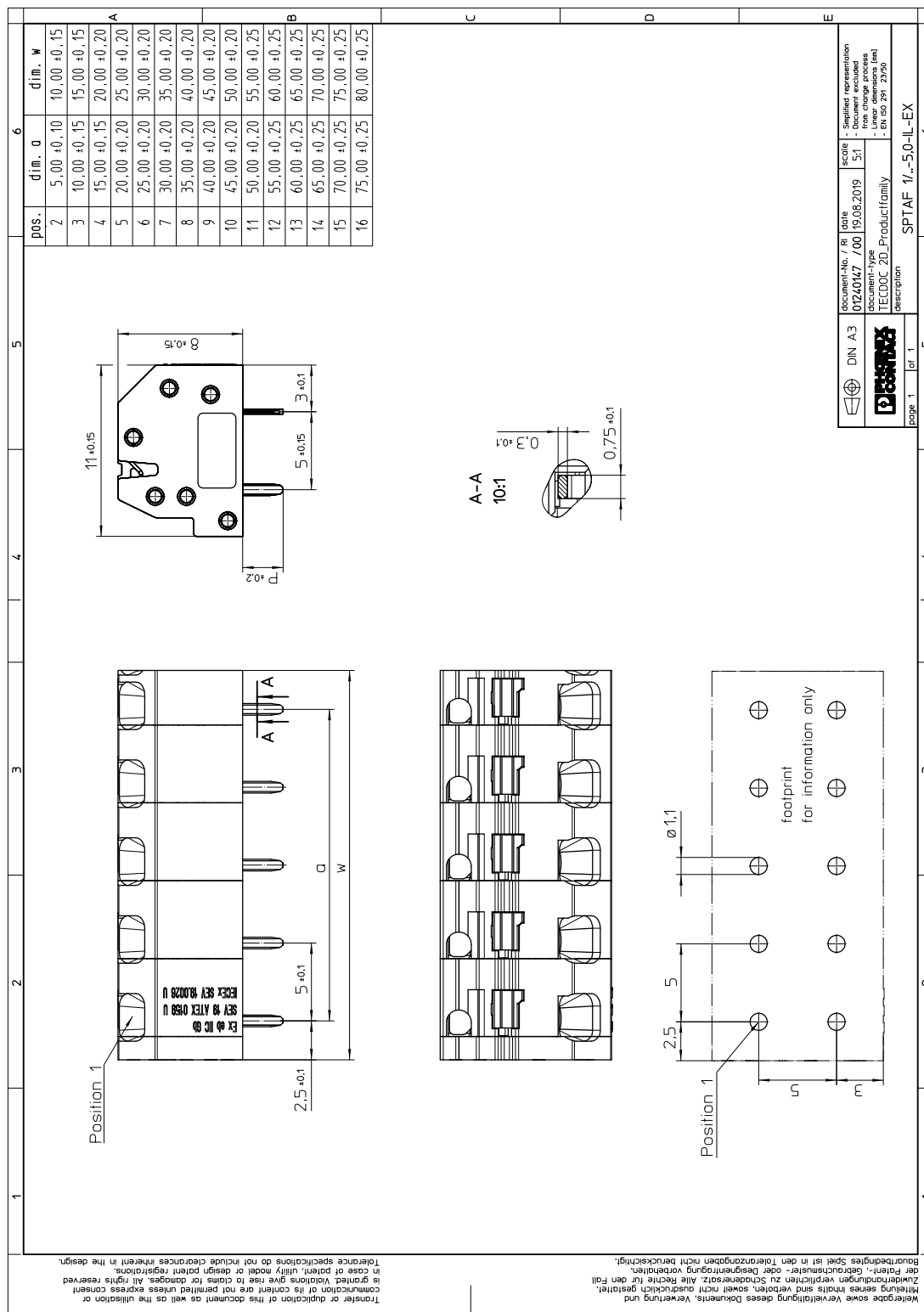
**1071074 SPTAF 1/ 8-5,0-IL-EX**

|                                        | 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                |

**1071074 SPTAF 1/ 8-5,0-IL-EX****7 Dimensions****7.1 Dimensions for the product**

|                             |         |
|-----------------------------|---------|
|                             |         |
| Length                      | 11 mm   |
| Width                       | 40 mm   |
| Height (without solder pin) | 8 mm    |
| Total height                | 10.6 mm |
| Solder pin [P]              | 2.6 mm  |
| Dimension a                 | 35 mm   |

## 8 Series drawing



**1071074 SPTAF 1/ 8-5,0-IL-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 $\leq 3$ mm |
| Note on Ex protection | Konformitätsbescheinigung und EX-Zertifikate auf Anfrage erhältlich   |
| Note on Ex protection |                                                                       |

**10 Packaging information**

|                    |      |
|--------------------|------|
| Type of packaging  | Tray |
| Pieces per package | 80   |

**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 |

**1071074 SPTAF 1/ 8-5,0-IL-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 <sup>2</sup> / solid / > 10 N     |
| Conductor cross section/conductor type/tractive force actual value | 0.25 mm <sup>2</sup> / flexible / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm <sup>2</sup> / solid / > 40 N     |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm <sup>2</sup> / flexible / > 40 N  |

**11.2 Check for damage to conductor or loosening**

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

**1071074 SPTAF 1/ 8-5,0-IL-EX****12 Electrical tests****12.1 Electrical data**

|                                         |                            |
|-----------------------------------------|----------------------------|
| Rated current / conductor cross section | 16 A / 1.5 mm <sup>2</sup> |
| 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 <sup>2</sup> / 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 <sub>1</sub>                                    | 0.8 mΩ / 1.5 mm <sup>2</sup> |
| 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 <sub>2</sub>                                    | 0.9 mΩ / 1.5 mm <sup>2</sup> |
| Rated impulse voltage at sea level<br>Voltage waveform ≥ (1.2/50 μs) | 4.8 kV                       |
| Power-frequency withstand voltage<br>Voltage waveform ≥ (50/60 Hz)   | 2.2 kV                       |

**12.4 Mechanical connection test for the PCB terminal block**

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

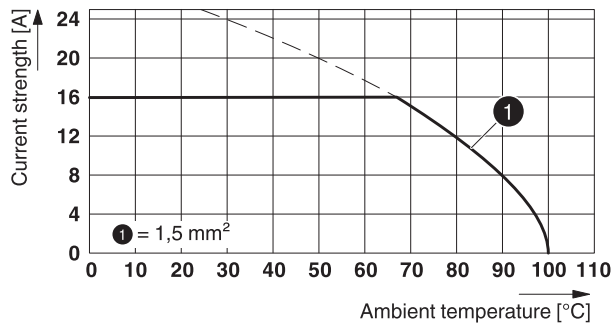
**12.5 Temperature rise test**

|                                                       |                                                                                                                                |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 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 <sup>2</sup> / 16 A / 33.5 K                                                                                            |

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### 13 Current carrying capacity/derating curves

Type: SPTAF 1/...-5,0-IL(EL)



**1071074 SPTAF 1/ 8-5,0-IL-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                                    | unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB |

**15 Approvals**

**1071074 SPTAF 1/ 8-5,0-IL-EX****16 Commercial Data**

|                    |                                                      |
|--------------------|------------------------------------------------------|
| Order No.          | 1071074                                              |
| Type               | SPTAF 1/ 8-5,0-IL-EX                                 |
| Pieces per package | 80                                                   |
| Net weight         | 4 g                                                  |
| GTIN               | 4063151101053                                        |
|                    | 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 <sup>2</sup> ... 6.0 mm <sup>2</sup> , lateral entry, trapezoidal crimp | 1212034   | CRIMPFOX 6    |

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