

## PCB terminal block - SPTAF 1/ 7-3,5-IL - 1861988

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PCB terminal block, nominal current: 16 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, pitch: 3.5 mm, number of positions: 7, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear double pinning, Solder pin [P]: 2.6 mm



The figure shows a 10-position version of the product

### 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
- ✓ Quick and convenient testing using integrated test option



### Key Commercial Data

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit           | 70 pc                                                                                                   |
| Minimum order quantity | 70 pc                                                                                                   |
| GTIN                   | <br>4 055626 135021 |
| GTIN                   | 4055626135021                                                                                           |

### Technical data

#### Item properties

|                           |                           |
|---------------------------|---------------------------|
| Brief article description | PCB terminal block        |
| Range of articles         | SPTAF 1/...-IL            |
| Pitch                     | 3.5 mm                    |
| Number of positions       | 7                         |
| Connection method         | Push-in spring connection |
| Mounting type             | Wave soldering            |
| Pin layout                | Linear double pinning     |
| Number of levels          | 1                         |
| Number of connections     | 7                         |

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## Technical data

### Item properties

|                      |   |
|----------------------|---|
| Number of potentials | 7 |
|----------------------|---|

### Electrical parameters

|                             |        |
|-----------------------------|--------|
| Nominal current             | 16 A   |
| Nom. voltage                | 160 V  |
| Rated voltage               | 160 V  |
| Rated voltage (III/2)       | 160 V  |
| Rated voltage (II/2)        | 320 V  |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated surge voltage (II/2)  | 2.5 kV |

### Connection capacity

|                                                                       |                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection method                                                     | Push-in spring connection                                                                                                                                                                                                                   |
| 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 AWG / kcmil                                   | 24 ... 16                                                                                                                                                                                                                                   |
| 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                                                                                                                                                                                                                                        |

### Material data - contact

|                                          |                                                                                   |
|------------------------------------------|-----------------------------------------------------------------------------------|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/ JEDEC JESD 201 |
| Contact material                         | Cu alloy                                                                          |
| Surface characteristics                  | hot-dip tin-plated                                                                |
| Metal surface terminal point (top layer) | Tin (2 - 4 µm Sn)                                                                 |
| Metal surface soldering area (top layer) | Tin (2 - 4 µm Sn)                                                                 |

### Material data - housing

|                                        |              |
|----------------------------------------|--------------|
| Housing color                          | green (6021) |
| Insulating material                    | PA           |
| Insulating material group              | I            |
| CTI according to IEC 60112             | 600          |
| Flammability rating according to UL 94 | V0           |

### Dimensions for the product

|                             |         |
|-----------------------------|---------|
| Length [ l ]                | 11 mm   |
| Width [ w ]                 | 26 mm   |
| Height [ h ]                | 10.6 mm |
| Pitch                       | 3.5 mm  |
| Height (without solder pin) | 8 mm    |

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## Technical data

### Dimensions for the product

|                |               |
|----------------|---------------|
| Solder pin [P] | 2.6 mm        |
| Pin spacing    | 5 mm          |
| Pin dimensions | 0.75 x 0.3 mm |

### Dimensions for PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.1 mm |
| Pin spacing   | 5 mm   |

### Packaging information

|                            |                     |
|----------------------------|---------------------|
| Type of packaging          | packed in cardboard |
| Pieces per package         | 70                  |
| Denomination packing units | Pcs.                |

### General product information

|              |                                                                       |
|--------------|-----------------------------------------------------------------------|
| Type of note | Note on application                                                   |
| Note         | Maximum permissible outer diameter of the wire insulation $\leq 3$ mm |

### Processing notes

|               |                                  |
|---------------|----------------------------------|
| Process       | Wave soldering                   |
| Specification | Following IEC 61760-1:2006-04    |
|               | Following IEC 60068-2-54:2006-04 |

### Ambient conditions

|                                         |                                                     |
|-----------------------------------------|-----------------------------------------------------|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                    |
| Ambient temperature (assembly)          | -5 °C ... 100 °C                                    |
| Ambient temperature (operation)         | -40 °C ... 100 °C (dependent on the derating curve) |

### Termination and connection method

|                                          |                     |
|------------------------------------------|---------------------|
| Test – repeated connection and release   | IEC 60999-1:1999-11 |
|                                          | Test passed         |
| Test for conductor damage and slackening | IEC 60999-1:1999-11 |
|                                          | Test passed         |

### Pull-out test

|                                                          |                                          |
|----------------------------------------------------------|------------------------------------------|
| Pull-out test                                            | IEC 60999-1:1999-11                      |
|                                                          | Test passed                              |
| Conductor cross section / conductor type / tensile force | 0.2 mm <sup>2</sup> / solid / > 10 N     |
|                                                          | 0.25 mm <sup>2</sup> / flexible / > 10 N |
|                                                          | 1.5 mm <sup>2</sup> / solid / > 40 N     |
|                                                          | 1.5 mm <sup>2</sup> / flexible / > 40 N  |

### Mechanical tests according to standard

|                    |               |
|--------------------|---------------|
| Test specification | IEC 60947-7-4 |
|--------------------|---------------|

### Electrical tests

|               |      |
|---------------|------|
| Rated current | 16 A |
|---------------|------|

## PCB terminal block - SPTAF 1/ 7-3,5-IL - 1861988

### Technical data

#### Electrical tests

|                             |                     |
|-----------------------------|---------------------|
| Conductor cross section     | 1.5 mm <sup>2</sup> |
| Rated voltage (III/2)       | 160 V               |
| Rated surge voltage (III/2) | 2.5 kV              |

#### Air clearances and creepage distances

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| Clearances and creepage distances               | IEC 60947-1:2007-06 + A1:2010-12 |
| Specification                                   | IEC 60947-1:2007-06 + A1:2010-12 |
| Minimum clearance - inhomogeneous field (III/3) | 1.5 mm                           |
| Minimum clearance - inhomogeneous field (III/2) | 1.5 mm                           |
| Minimum clearance - inhomogeneous field (II/2)  | 1.5 mm                           |
| Minimum creepage distance value (III/3)         | 2 mm                             |
| Minimum creepage distance value (III/2)         | 0.8 mm                           |
| Minimum creepage distance value (II/2)          | 1.6 mm                           |

#### 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. |

#### Current carrying capacity / derating curves

|                     |                                               |
|---------------------|-----------------------------------------------|
| Caption             | Type: SPTAF 1/...-3,5-IL(EL)                  |
| Specification       | IEC 60947-7-4:2013-08                         |
| Number of positions | 4                                             |
| Reduction factor    | 1                                             |
| Note                | Representation based on IEC 60512-5-2:2002-02 |

#### 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) |
| Acceleration           | 5 g (60.1 - 150 Hz)    |
| Test duration per axis | 2.5 h                  |

#### Insulation resistance

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Result                                       | Test passed           |
| Insulation resistance, neighboring positions | > 0,4 TΩ              |

#### Glow-wire test

|               |                        |
|---------------|------------------------|
| Specification | IEC 60695-2-10:2013-04 |
| Result        | Test passed            |

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### Technical data

#### Glow-wire test

|                  |        |
|------------------|--------|
| Temperature      | 850 °C |
| Time of exposure | 5 s    |

#### Alternating climate test

|                  |                   |
|------------------|-------------------|
| Result           | Test passed       |
| Specification    | ISO 6988:1985-02  |
| Corrosive stress | KFW 0.2 S/1 cycle |

#### Standards and Regulations

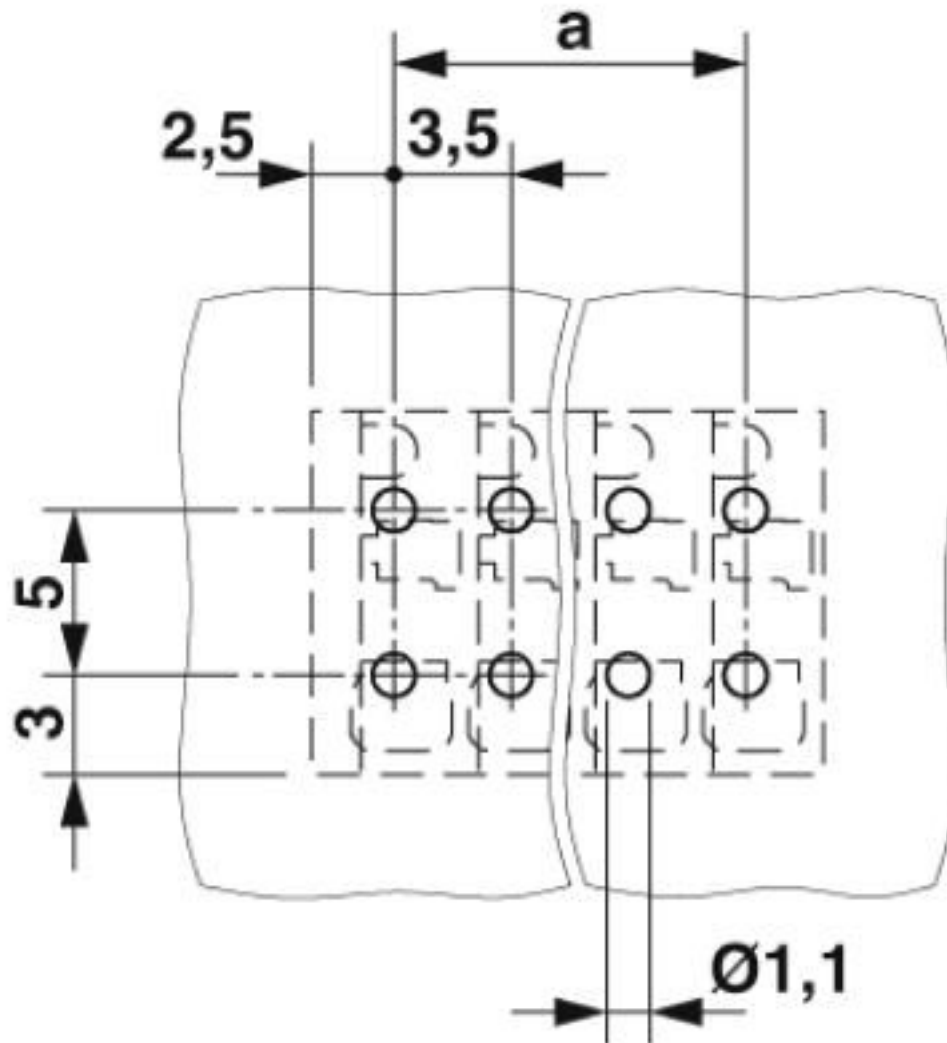
|                                        |        |
|----------------------------------------|--------|
| Connection in acc. with standard       | EN-VDE |
| Flammability rating according to UL 94 | V0     |

#### Environmental Product Compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

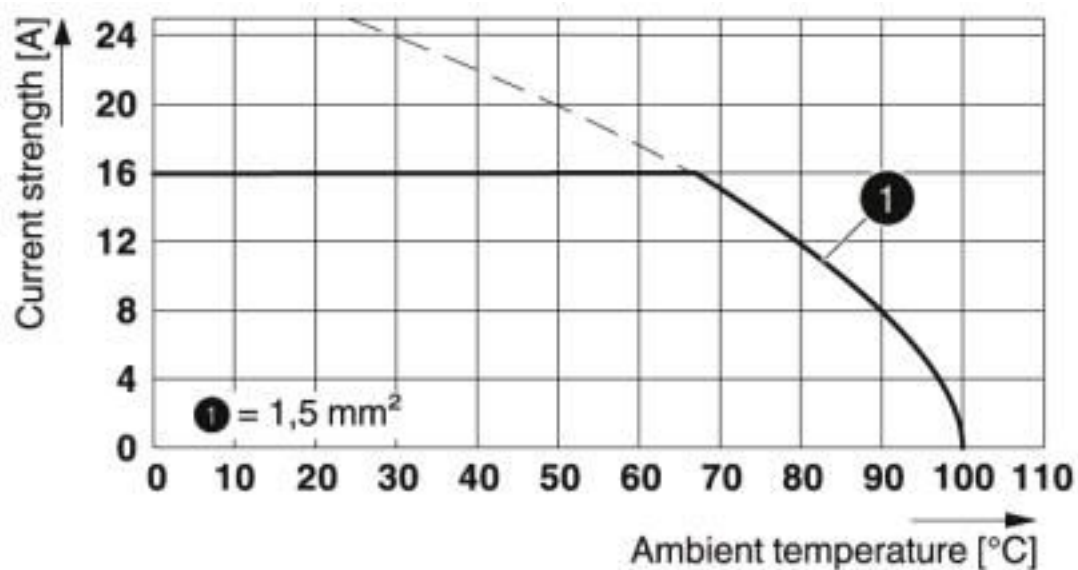
### Drawings

### Drilling diagram



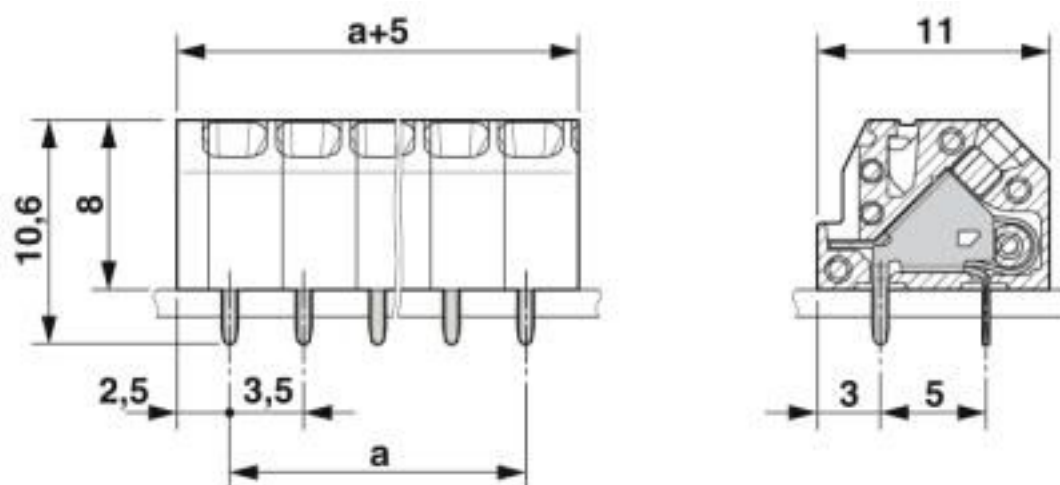
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Diagram



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

Dimensional drawing



### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440401 |
| eCl@ss 5.1    | 27261100 |
| eCl@ss 6.0    | 27261100 |
| eCl@ss 7.0    | 27440401 |
| eCl@ss 8.0    | 27440401 |
| eCl@ss 9.0    | 27440401 |

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### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 5.0 | EC002643 |
| ETIM 6.0 | EC002643 |
| ETIM 7.0 | EC002643 |

#### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121432 |
| UNSPSC 18.0 | 39121432 |
| UNSPSC 19.0 | 39121432 |
| UNSPSC 20.0 | 39121432 |
| UNSPSC 21.0 | 39121432 |

### Approvals

#### Approvals

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IECEE CB Scheme / VDE Zeichengenehmigung / cULus Recognized / EAC

#### Ex Approvals

#### Approval details

|                    |                                                                                     |                                                           |           |
|--------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------|
| IECEE CB Scheme    |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a> | DE1-61914 |
| Nominal voltage UN | 160 V                                                                               |                                                           |           |
| Nominal current IN | 16 A                                                                                |                                                           |           |
| mm²/AWG/kcmil      | 0.2-1.5                                                                             |                                                           |           |

|                        |                                                                                     |                                                                                                                                                                                                           |          |
|------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| VDE Zeichengenehmigung |  | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> | 40047107 |
| Nominal voltage UN     | 160 V                                                                               |                                                                                                                                                                                                           |          |
| Nominal current IN     | 16 A                                                                                |                                                                                                                                                                                                           |          |
| mm²/AWG/kcmil          | 0.2-1.5                                                                             |                                                                                                                                                                                                           |          |

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### Approvals

|                    |                                                                                   |                                                                                                                                                                       |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cULus Recognized   |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> E60425-20061129 |
|                    | B                                                                                 | D                                                                                                                                                                     |
| Nominal voltage UN | 300 V                                                                             | 300 V                                                                                                                                                                 |
| Nominal current IN | 8 A                                                                               | 8 A                                                                                                                                                                   |
| mm²/AWG/kcmil      | 24-16                                                                             | 24-16                                                                                                                                                                 |

|     |                                                                                   |         |
|-----|-----------------------------------------------------------------------------------|---------|
| EAC |  | B.01687 |
|-----|-----------------------------------------------------------------------------------|---------|

### Accessories

#### Accessories

##### Crimping tool

Crimping pliers - CRIMPFOX 6 - 1212034



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 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

##### Screwdriver tools

Screwdriver - SZF 0-0,4X2,5 - 1204504



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

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