

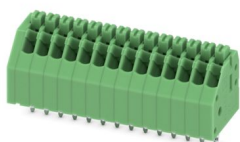
# PTSA 0,5/14-2,5-F - PCB terminal block



1989861

<https://www.phoenixcontact.com/us/products/1989861>

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Printed circuit board terminal, nominal current: 2 A, rated voltage (III/2): 250 V, nominal cross section: 0.5 mm<sup>2</sup>, number of potentials: 14, number of rows: 1, number of positions per row: 14, product range: PTSA 0,5, pitch: 2.5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.6 mm, number of solder pins per potential: 1, type of packaging: packed in cardboard. Soldering legs in front area, one-rowed

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Angled connection enables multi-row arrangement on the PCB

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1989861                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA11                           |
| Product key                          | AAKBDA                         |
| GTIN                                 | 4017918973469                  |
| Weight per piece (including packing) | 5.18 g                         |
| Weight per piece (excluding packing) | 5.06 g                         |
| Customs tariff number                | 85369010                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | PTSA 0,5                       |
| Product line              | COMBICON Terminals XS          |
| Type                      | PC termination block           |
| Number of positions       | 14                             |
| Pitch                     | 2.5 mm                         |
| Number of connections     | 14                             |
| Number of rows            | 1                              |
| Number of potentials      | 14                             |
| Pin layout                | Linear pinning                 |
| Solder pins per potential | 1                              |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 2 A    |
| Nominal voltage $U_N$       | 250 V  |
| Rated voltage (III/3)       | 63 V   |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2)       | 250 V  |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated voltage (II/2)        | 320 V  |
| Rated surge voltage (II/2)  | 2.5 kV |

### Connection data

#### Connection technology

|                       |                      |
|-----------------------|----------------------|
| Type                  | PC termination block |
| Nominal cross section | 0.5 mm <sup>2</sup>  |

#### Conductor connection

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Connection method                | Push-in spring connection                    |
| Conductor cross-section rigid    | 0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |
| Conductor cross-section flexible | 0.2 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>  |
| Conductor cross-section AWG      | 24 ... 20                                    |
| Stripping length                 | 9 mm                                         |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
| Pin layout    | Linear pinning |

### Material specifications

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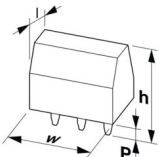
## Material data - contact

|                                          |                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------|
| 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 (4 - 8 µm Sn)                                                                |
| Metal surface soldering area (top layer) | Tin (4 - 8 µm Sn)                                                                |

## Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| Color (Housing)                                                   | green (6021) |
| Insulating material                                               | PA           |
| Insulating material group                                         | I            |
| CTI according to IEC 60112                                        | 600          |
| Flammability rating according to UL 94                            | V0           |
| Glow wire flammability index GWFI according to EN 60695-2-12      | 850          |
| Glow wire ignition temperature GWIT according to EN 60695-2-13    | 775          |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C       |

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 2.5 mm                                                                               |
| Width [w]             | 36.5 mm                                                                              |
| Height [h]            | 16.7 mm                                                                              |
| Length [l]            | 12 mm                                                                                |
| Installed height      | 13.1 mm                                                                              |
| Solder pin length [P] | 3.6 mm                                                                               |
| Pin dimensions        | 0.4 x 0.75 mm                                                                        |

## PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 2.5 mm |
| Hole diameter | 1 mm   |

## Mechanical tests

### Test for conductor damage and slackening

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

### Pull-out test

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
|---------------|---------------------|

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|                                                                                |                                         |
|--------------------------------------------------------------------------------|-----------------------------------------|
| Conductor cross-section/conductor type/tractive force<br>setpoint/actual value | 0.14 mm <sup>2</sup> / solid / > 10 N   |
|                                                                                | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|                                                                                | 0.5 mm <sup>2</sup> / solid / > 20 N    |
|                                                                                | 0.5 mm <sup>2</sup> / flexible / > 20 N |

## Electrical tests

### Temperature-rise test

|                                   |                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Specification                     | IEC 60947-7-4:2019-01                                                                                                          |
| Requirement temperature-rise test | The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature. |

### Short-time withstand current

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2019-01 |
|---------------|-----------------------|

### Insulation resistance

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 5 MΩ                |

### Air clearances and creepage distances |

|                                                        |                                               |
|--------------------------------------------------------|-----------------------------------------------|
| Specification                                          | IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09 |
| Insulating material group                              | I                                             |
| Comparative tracking index (IEC 60112)                 | CTI 600                                       |
| Rated insulation voltage (III/3)                       | 63 V                                          |
| Rated surge voltage (III/3)                            | 2.5 kV                                        |
| minimum clearance value - non-homogenous field (III/3) | 1.5 mm                                        |
| minimum creepage distance (III/3)                      | 1.6 mm                                        |
| Rated insulation voltage (III/2)                       | 250 V                                         |
| Rated surge voltage (III/2)                            | 2.5 kV                                        |
| minimum clearance value - non-homogenous field (III/2) | 1.5 mm                                        |
| minimum creepage distance (III/2)                      | 1.5 mm                                        |
| Rated insulation voltage (II/2)                        | 320 V                                         |
| Rated surge voltage (II/2)                             | 2.5 kV                                        |
| minimum clearance value - non-homogenous field (II/2)  | 1.5 mm                                        |
| minimum creepage distance (II/2)                       | 1.6 mm                                        |

## Environmental and real-life conditions

### Vibration test

|                        |                             |
|------------------------|-----------------------------|
| Specification          | IEC 60068-2-6:2007-12       |
| Frequency              | 10 - 150 - 10 Hz            |
| Sweep speed            | 1 octave/min                |
| Amplitude              | 0.35 mm (10 Hz ... 60.1 Hz) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |
| Test directions        | X-, Y- and Z-axis           |

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## Glow-wire test

|                  |                        |
|------------------|------------------------|
| Specification    | IEC 60695-2-10:2013-04 |
| Temperature      | 850 °C                 |
| Time of exposure | 5 s                    |

## Aging

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2019-01 |
|---------------|-----------------------|

## Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -40 °C ... 85 °C |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport)   | 30 % ... 70 %    |
| Ambient temperature (assembly)          | -5 °C ... 55 °C  |

## Packaging specifications

|                   |                     |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

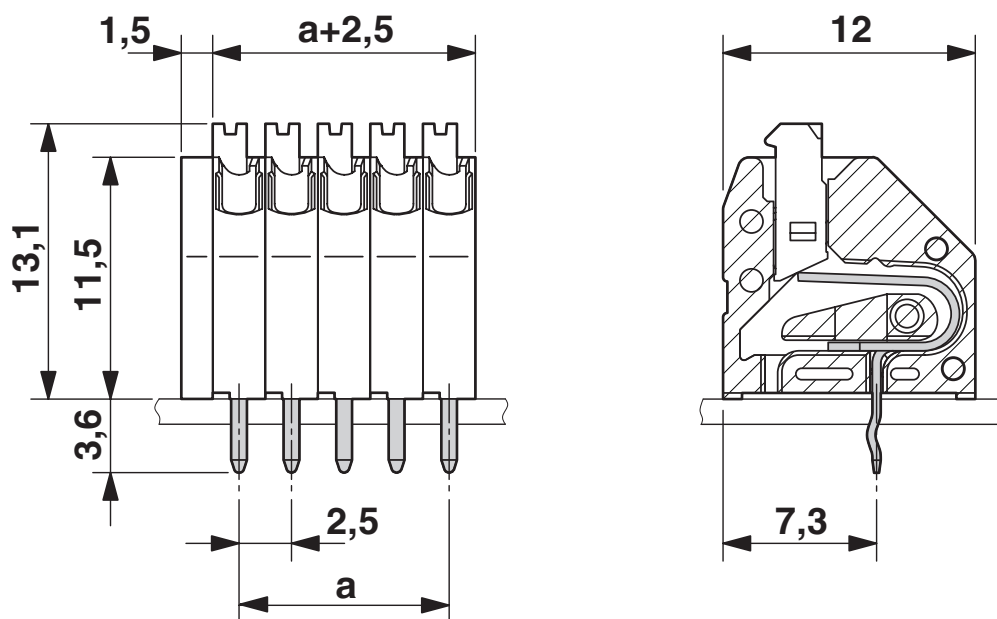
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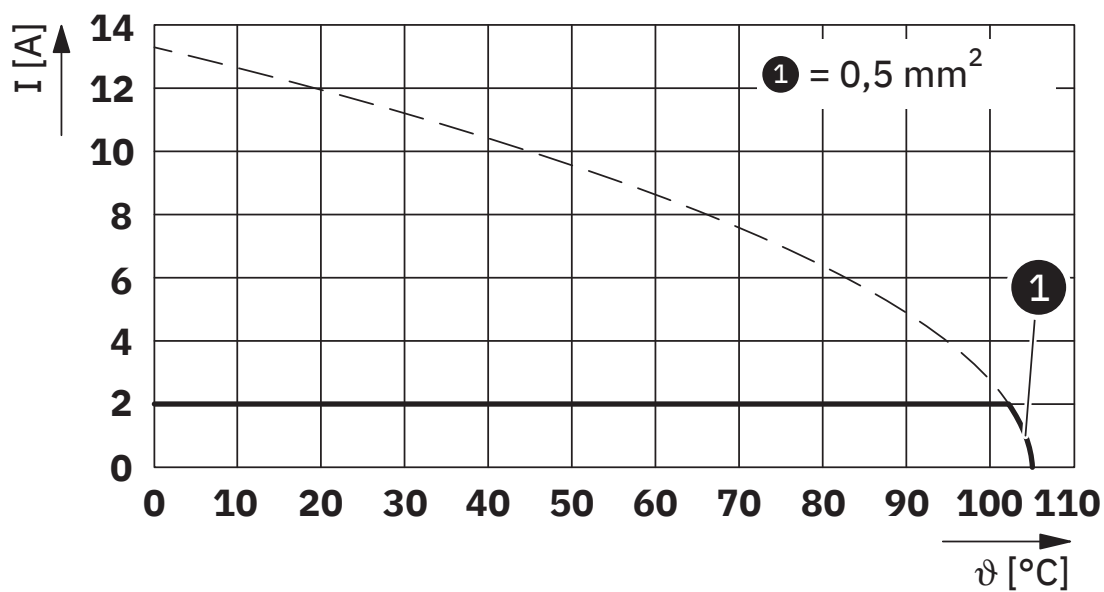
## Drawings

Dimensional drawing



The figure shows the 5-pos. version

Diagram



Type: PTSA 0,5/...-2,5-F

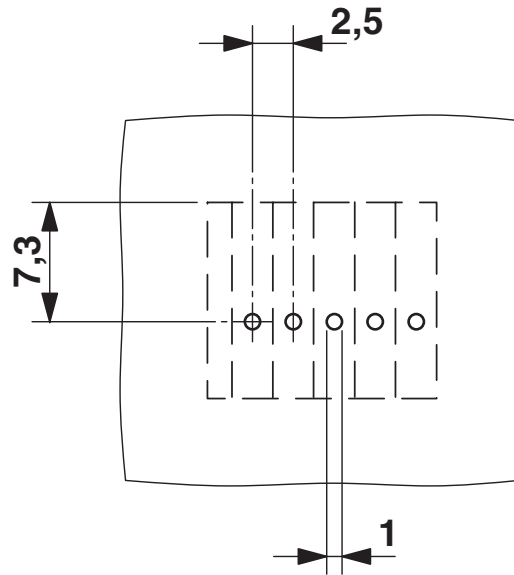
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Drilling plan/solder pad geometry



The figure shows the 5-pos. version

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1989861>

|  <b>cULus Recognized</b><br>Approval ID: E60425-20030527 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         |                       |                       |                   |                             |
| Field wiring                                                                                                                              | 150 V                 | 1 A                   | 26 - 20           | -                           |
| Factory wiring                                                                                                                            | 150 V                 | 2 A                   | 26 - 20           | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40013932 |                       |                       |                   |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                                         | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                                   |                       |                       |                   |                             |
|                                                                                                                                                         | 130 V                 | 2 A                   | -                 | - 0.5                       |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460101 |
| ECLASS-15.0 | 27460101 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002643 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

### China RoHS

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-E                                   |
|                                        | No hazardous substances above the limits |

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.075 kg CO2e |
|---------|---------------|

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