

# PTSA 1,5/ 5-3,5-Z - PCB terminal block



1985221

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Printed circuit board terminal, nominal current: 8 A, rated voltage (III/2): 400 V, nominal cross section: 1.5 mm<sup>2</sup>, number of potentials: 5, number of rows: 1, number of positions per row: 5, product range: PTSA 1,5, pitch: 3.5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Zigzag pinning M, Solder pin [P]: 3.5 mm, number of solder pins per potential: 1, type of packaging: packed in cardboard. Offset soldering legs, two-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                          | 1985221       |
| Packing unit                         | 180 pc        |
| Minimum order quantity               | 180 pc        |
| Sales key                            | AA12          |
| Product key                          | AALBDA        |
| GTIN                                 | 4017918922306 |
| Weight per piece (including packing) | 2.777 g       |
| Weight per piece (excluding packing) | 2.424 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | CN            |

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## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | PTSA 1,5                       |
| Product line              | COMBICON Terminals S           |
| Type                      | PC termination block           |
| Number of positions       | 5                              |
| Pitch                     | 3.5 mm                         |
| Number of connections     | 5                              |
| Number of rows            | 1                              |
| Number of potentials      | 5                              |
| Pin layout                | Zigzag pinning M               |
| Solder pins per potential | 1                              |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 8 A   |
| Nominal voltage $U_N$       | 400 V |
| Rated voltage (III/3)       | 250 V |
| Rated surge voltage (III/3) | 4 kV  |
| Rated voltage (III/2)       | 400 V |
| Rated surge voltage (III/2) | 4 kV  |
| Rated voltage (II/2)        | 630 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Connection data

#### Connection technology

|                       |                      |
|-----------------------|----------------------|
| Type                  | PC termination block |
| Nominal cross section | 1.5 mm <sup>2</sup>  |

#### Conductor connection

|                                                                       |                                              |
|-----------------------------------------------------------------------|----------------------------------------------|
| Connection method                                                     | Push-in spring connection                    |
| Conductor cross-section rigid                                         | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section AWG                                           | 24 ... 16                                    |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>   |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |
| Stripping length                                                      | 9 mm                                         |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
|---------------|----------------|

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|            |                  |
|------------|------------------|
| Pin layout | Zigzag pinning M |
|------------|------------------|

## Material specifications

### 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)                                                                |

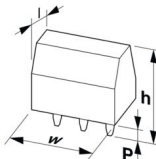
### Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| 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       |

### Material data – actuating element

|                           |              |
|---------------------------|--------------|
| Color (Actuating element) | green (6021) |
|---------------------------|--------------|

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 3.5 mm                                                                               |
| Width [w]             | 19 mm                                                                                |
| Height [h]            | 16.7 mm                                                                              |
| Length [l]            | 12 mm                                                                                |
| Installed height      | 13.1 mm                                                                              |
| Solder pin length [P] | 3.5 mm                                                                               |
| Pin dimensions        | 0.4 x 0.75 mm                                                                        |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 3.5 mm |
| Hole diameter | 1 mm   |

## Mechanical tests

# PTSA 1,5/ 5-3,5-Z - PCB terminal block



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## Test for conductor damage and slackening

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

## Pull-out test

|                                                                             |                                         |
|-----------------------------------------------------------------------------|-----------------------------------------|
| Specification                                                               | IEC 60999-1:1999-11                     |
| Conductor cross-section/conductor type/tractive force setpoint/actual value | 0.2 mm <sup>2</sup> / solid / > 10 N    |
|                                                                             | 0.2 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 |

## Electrical tests

### Temperature-rise test

|                                   |                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Specification                     | IEC 60947-7-4:2013-08                                                                                                          |
| 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 60947-7-4:2013-08 |
|---------------|-----------------------|

### 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)                       | 250 V                                                 |
| Rated surge voltage (III/3)                            | 4 kV                                                  |
| minimum clearance value - non-homogenous field (III/3) | 3 mm                                                  |
| minimum creepage distance (III/3)                      | 3.2 mm                                                |
| Note on connection cross section                       | With connected conductor 1.5 mm <sup>2</sup> (solid). |
| Rated insulation voltage (III/2)                       | 400 V                                                 |
| Rated surge voltage (III/2)                            | 4 kV                                                  |
| minimum clearance value - non-homogenous field (III/2) | 3 mm                                                  |
| minimum creepage distance (III/2)                      | 3 mm                                                  |
| Rated insulation voltage (II/2)                        | 630 V                                                 |
| Rated surge voltage (II/2)                             | 4 kV                                                  |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm                                                  |
| minimum creepage distance (II/2)                       | 3.2 mm                                                |

## Environmental and real-life conditions

### Vibration test

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|                        |                             |
|------------------------|-----------------------------|
| 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           |

## Glow-wire test

|                  |                        |
|------------------|------------------------|
| Specification    | IEC 60695-2-10:2000-10 |
| Temperature      | 850 °C                 |
| Time of exposure | 5 s                    |

## Aging

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2013-08 |
|---------------|-----------------------|

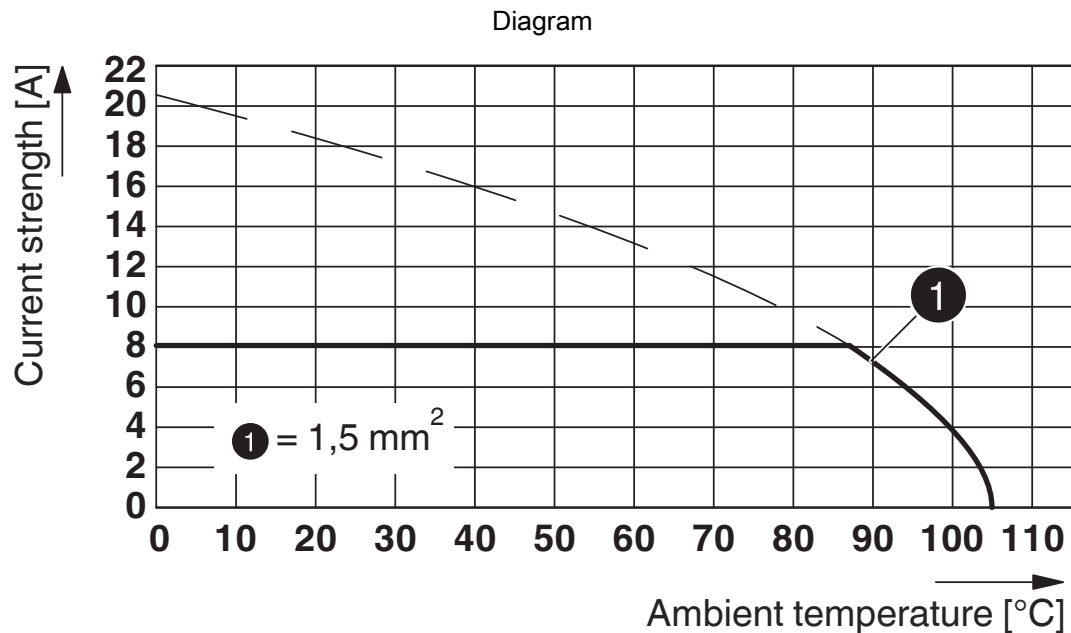
## Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 100 °C (Depending on the current carrying capacity/derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                                              |
| Relative humidity (storage/transport)   | 30 % ... 70 %                                                                 |
| Ambient temperature (assembly)          | -5 °C ... 85 °C                                                               |

## Packaging specifications

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

## Drawings



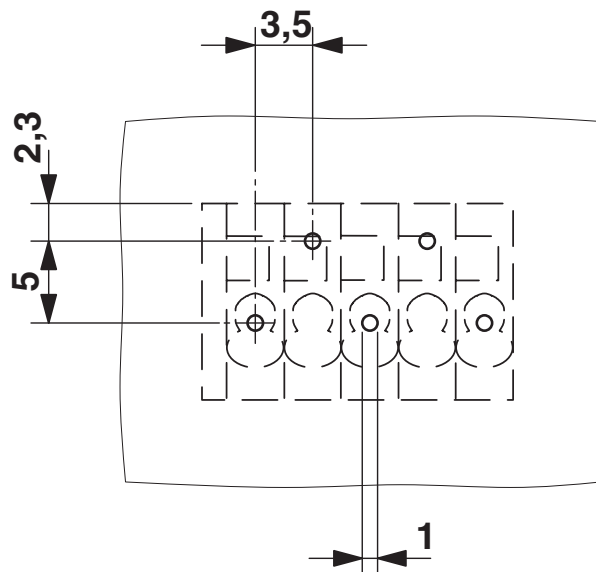
### Type: PTSA 1,5/4-3,5-Z

Tested in accordance with DIN EN 60512-5-2:2003-01

Reduction factor = 1

Number of positions: 4

### Drilling plan/solder pad geometry



The figure shows the drilling plan of the 5-pos. version of the article – Zig-zag pinning starts at the right-hand position. Other pinning available on request.

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1985221>

|  <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                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 5 A                   | 24 - 16           | -                           |
| D                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 5 A                   | 24 - 16           | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40018594 |                       |                       |                   |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                                         | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                                   |                       |                       |                   |                             |
|                                                                                                                                                         | 250 V                 | 2 A                   | -                 | 0.5 - 0.75                  |

|  <b>VDE approval of drawings</b><br>Approval ID: 40057505 |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                              | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                        |                       |                       |                   |                             |
|                                                                                                                                              | 400 V                 | 8 A                   | -                 | 0.2 - 1.5                   |

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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%               |

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)