

# PTSM 0,5/ 4-2,5-V THR R44 - PCB terminal block



1770979

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Printed circuit board terminal, nominal current: 6 A, rated voltage (III/2): 160 V, nominal cross section: 0.5 mm<sup>2</sup>, number of potentials: 4, number of rows: 1, number of positions per row: 4, product range: PTSM 0,5/..-V-THR, pitch: 2.5 mm, connection method: Push-in spring connection, mounting: THR soldering / wave soldering, conductor/PCB connection direction: 90 °, color: black, Pin layout: Linear pinning, Solder pin [P]: 2.1 mm, number of solder pins per potential: 2, type of packaging: 44 mm wide tape

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- High current carrying capacity of 6 A in very compact dimensions
- Designed for integration into the SMT soldering process
- Vertical connection enables multi-row arrangement on the PCB

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1770979       |
| Packing unit                         | 310 pc        |
| Minimum order quantity               | 310 pc        |
| Sales key                            | AA11          |
| Product key                          | AAKCAC        |
| GTIN                                 | 4046356459556 |
| Weight per piece (including packing) | 2.76 g        |
| Weight per piece (excluding packing) | 2.59 g        |
| Customs tariff number                | 85369010      |
| Country of origin                    | IN            |

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## Technical data

### Product properties

|                           |                                            |
|---------------------------|--------------------------------------------|
| Product type              | Printed circuit board terminal             |
| Product family            | PTSM 0,5/...-V-THR                         |
| Product line              | COMBICON Terminals XS                      |
| Type                      | Component suitable for through hole reflow |
| Number of positions       | 4                                          |
| Pitch                     | 2.5 mm                                     |
| Number of connections     | 4                                          |
| Number of rows            | 1                                          |
| Number of potentials      | 4                                          |
| Pin layout                | Linear pinning                             |
| Solder pins per potential | 2                                          |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 6 A    |
| Nominal voltage $U_N$       | 160 V  |
| Rated voltage (III/3)       | 32 V   |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2)       | 160 V  |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated voltage (II/2)        | 160 V  |
| Rated surge voltage (II/2)  | 2.5 kV |

### Connection data

#### Connection technology

|                       |                                            |
|-----------------------|--------------------------------------------|
| Type                  | Component suitable for through hole reflow |
| 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> (up to 0.75 mm <sup>2</sup> supported, with a stripping length of 7.5 mm and a rated insulation voltage of 32 V at III/2)    |
| Conductor cross-section AWG                                           | 26 ... 20                                                                                                                                                                |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>                                                                                                                             |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup> (possible from 0.14 mm <sup>2</sup> , when using ferrule AI 0.14- 6 GY in combination with crimping pliers CRIMPFOX 10T-F) |
| Cylindrical gauge a x b / diameter                                    | - / 1.2 mm                                                                                                                                                               |
| Stripping length                                                      | 6 mm                                                                                                                                                                     |

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## Mounting

|               |                                |
|---------------|--------------------------------|
| Mounting type | THR soldering / wave soldering |
| Pin layout    | Linear pinning                 |

### Processing notes

|                                           |                       |
|-------------------------------------------|-----------------------|
| Process                                   | Reflow/wave soldering |
| Moisture Sensitive Level                  | MSL 1                 |
| Classification temperature T <sub>c</sub> | 260 °C                |
| Solder cycles in the reflow               | 3                     |

## 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)                                                                |

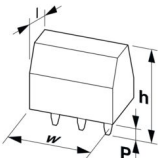
### Material data - housing

|                                        |              |
|----------------------------------------|--------------|
| Color (Housing)                        | black (9005) |
| Insulating material                    | LCP          |
| Insulating material group              | IIIa         |
| CTI according to IEC 60112             | 175          |
| Flammability rating according to UL 94 | V0           |

## Notes

|                     |                                                                                                                                               |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Note on application | Pick and place pads may protrude beyond the components. The PCB layout must ensure that collisions are avoided when components are assembled. |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 2.5 mm                                                                               |
| Width [w]             | 10.5 mm                                                                              |
| Height [h]            | 12.1 mm                                                                              |
| Length [l]            | 5 mm                                                                                 |
| Installed height      | 10 mm                                                                                |
| Solder pin length [P] | 2.1 mm                                                                               |
| Pin dimensions        | 0.3 x 0.8 mm                                                                         |

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## PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 2.5 mm |
| Hole diameter | 1.2 mm |

## Mechanical tests

### Connection test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

### Test for conductor damage and slackening

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

### Pull-out test

|                                                                             |                                          |
|-----------------------------------------------------------------------------|------------------------------------------|
| Specification                                                               | IEC 60998-2-2:2002-12                    |
| Conductor cross-section/conductor type/tractive force 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     |
|                                                                             | 0.75 mm <sup>2</sup> / flexible / > 30 N |

### Flexion test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

## Electrical tests

### Temperature-rise test

|                                   |                                |
|-----------------------------------|--------------------------------|
| Specification                     | IEC 60998-2-1:2002-12          |
| Requirement temperature-rise test | Increase in temperature ≤ 45 K |

### Insulation resistance

|                                              |                     |
|----------------------------------------------|---------------------|
| Specification                                | IEC 60998-1:2002-12 |
| Insulation resistance, neighboring positions | > 5 MΩ              |

### Air clearances and creepage distances |

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| Specification                                          | IEC 60664-1:2007-04 |
| Insulating material group                              | IIIa                |
| Comparative tracking index (IEC 60112)                 | CTI ≥ 175 to < 400  |
| Rated insulation voltage (III/3)                       | 32 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)                      | 2 mm                |
| Rated insulation voltage (III/2)                       | 160 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)                      | 2 mm                |

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|                                                       |        |
|-------------------------------------------------------|--------|
| Rated insulation voltage (II/2)                       | 160 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)                      | 2 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           |

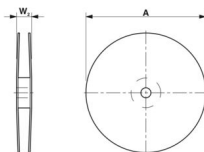
### Glow-wire test

|                  |                     |
|------------------|---------------------|
| Specification    | IEC 60998-1:2002-12 |
| Temperature      | 850 °C              |
| Time of exposure | 5 s                 |

### 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 ... 100 °C                                                              |

## Packaging specifications

|                             |                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing         |  |
| Type of packaging           | 44 mm wide tape                                                                      |
| [W] tape width              | 44 mm                                                                                |
| [W2] coil overall dimension | ≤ 50.4 mm                                                                            |
| [A] coil diameter           | ≤ 330 mm                                                                             |
| Outer packaging type        | Transparent-Bag                                                                      |

# PTSM 0,5/ 4-2,5-V THR R44 - PCB terminal block

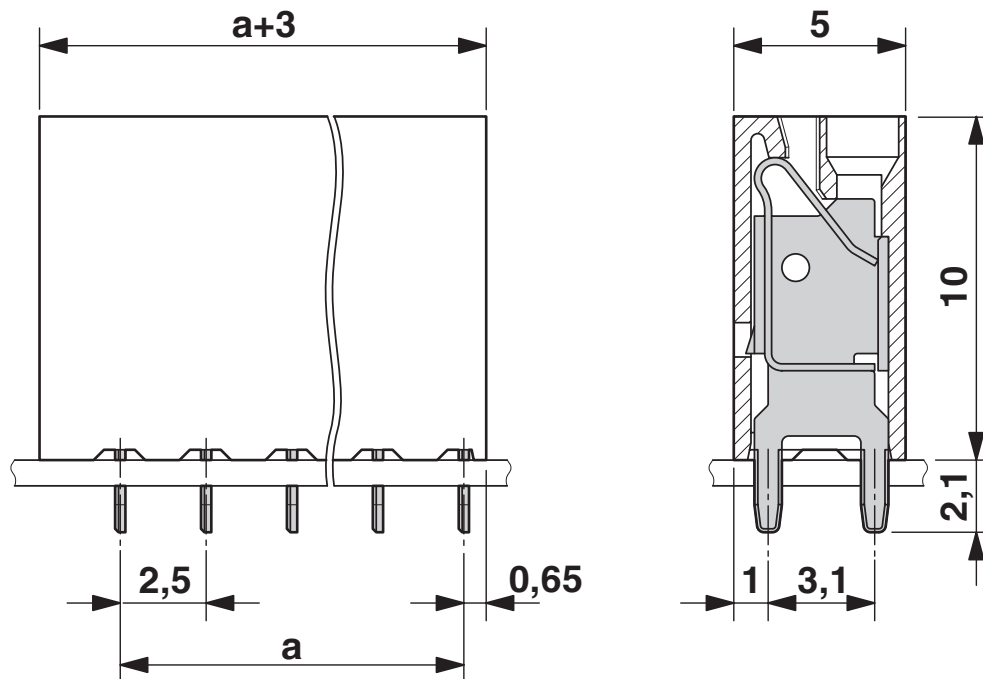


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## Drawings

Dimensional drawing



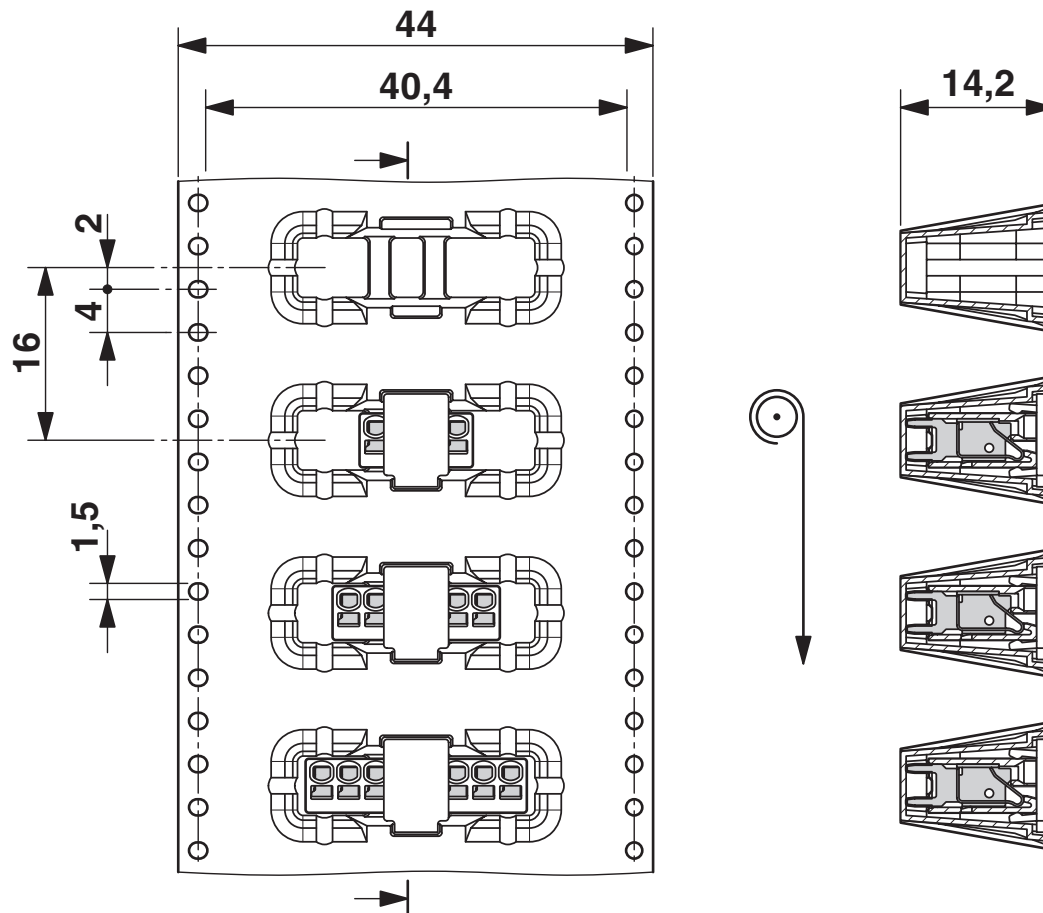
# PTSM 0,5/ 4-2,5-V THR R44 - PCB terminal block

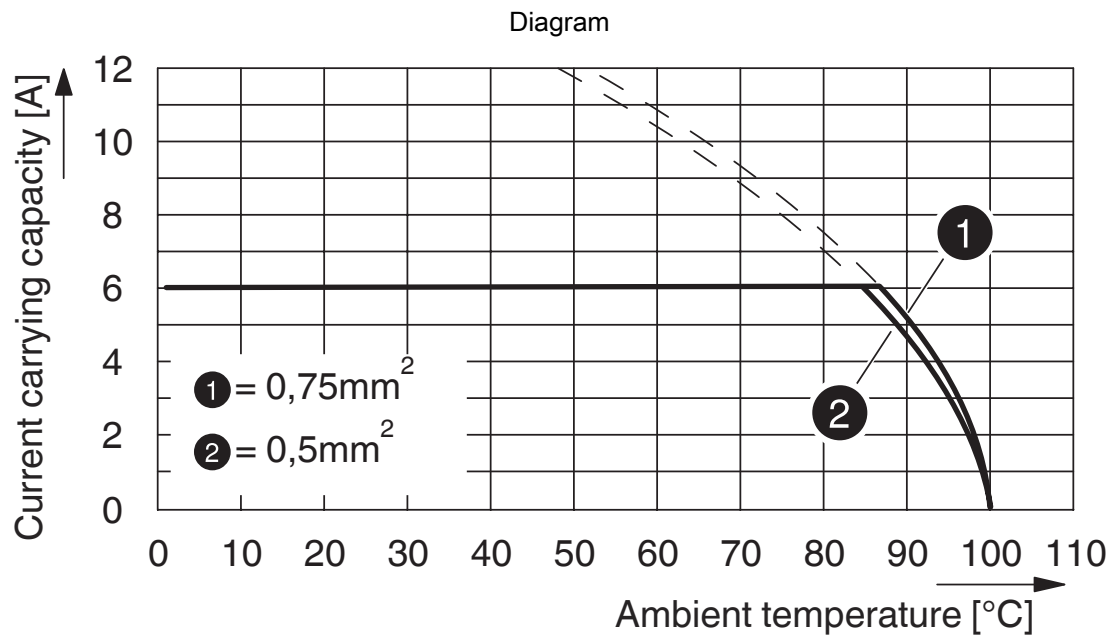
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Dimensional drawing





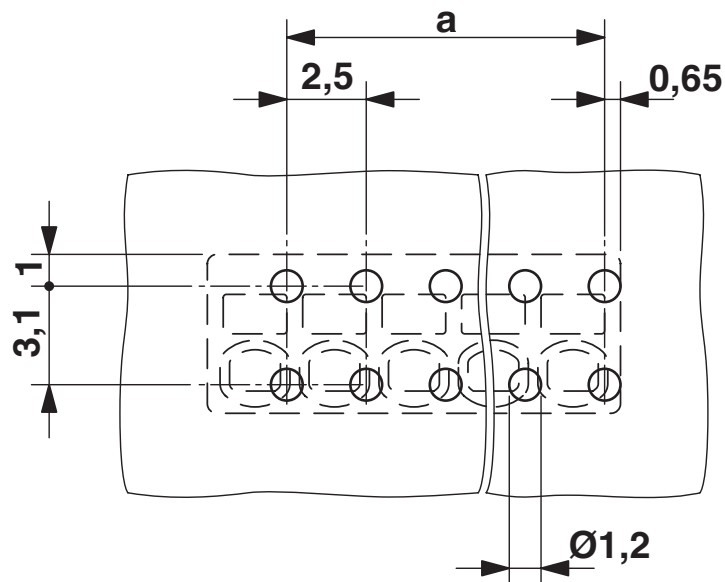
Type: PTSM 0,5/...-2,5-V THR R44

Tested according to DIN EN 60512-5-2:2003-01

Reduction factor = 1

Number of positions: 5

Drilling plan/solder pad geometry



# PTSM 0,5/ 4-2,5-V THR R44 - PCB terminal block



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1770979>

|  <b>UL Recognized</b><br>Approval ID: E118976-20130619 |                       |                       |                   |                             |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                         | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                       |                       |                       |                   |                             |
|                                                                                                                                         | 150 V                 | 5 A                   | 26 - 18           | -                           |

|  <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                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 150 V                 | 5 A                   | 26 - 20           | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40048725 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                      |                       |                       |                   |                             |
|                                                                                                                                            | 160 V                 | 6 A                   | -                 | 0.14 - 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%               |

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