

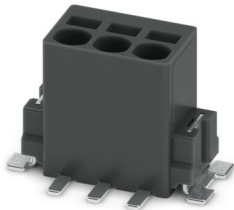
# PTSM 0,5/ 3-2,5-V SMD R44 - PCB terminal block



1771101

<https://www.phoenixcontact.com/us/products/1771101>

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PCB terminal block, nominal current: 6 A, rated voltage (III/2): 160 V, nominal cross section: 0.5 mm<sup>2</sup>, number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: PTSM 0,5/..-V-SMD, pitch: 2.5 mm, connection method: Push-in spring connection, mounting: SMD soldering, conductor/PCB connection direction: 90 °, color: black, Pin layout: Linear pad geometry, number of solder pins per potential: 1, 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
- Additional solder anchors reduce the mechanical strain on the soldering spots

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1771101       |
| Packing unit                         | 400 pc        |
| Minimum order quantity               | 400 pc        |
| Sales key                            | AA11          |
| Product key                          | AAKDAC        |
| GTIN                                 | 4046356460132 |
| Weight per piece (including packing) | 2.183 g       |
| Weight per piece (excluding packing) | 2.183 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | IN            |

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## Technical data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Product type              | PCB terminal block    |
| Product family            | PTSM 0,5/...-V-SMD    |
| Product line              | COMBICON Terminals XS |
| Number of positions       | 3                     |
| Pitch                     | 2.5 mm                |
| Number of connections     | 3                     |
| Number of rows            | 1                     |
| Number of potentials      | 3                     |
| Pin layout                | Linear pad geometry   |
| Solder pins per potential | 1                     |

### 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

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

### Mounting

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|               |                     |
|---------------|---------------------|
| Mounting type | SMD soldering       |
| Pin layout    | Linear pad geometry |

## Processing notes

|                                  |                  |
|----------------------------------|------------------|
| Process                          | Reflow soldering |
| Moisture Sensitive Level         | MSL 1            |
| Classification temperature $T_c$ | 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 $\mu\text{m}$ - 8 $\mu\text{m}$ Sn)                                       |
| Metal surface soldering area (top layer) | Tin (4 $\mu\text{m}$ - 8 $\mu\text{m}$ 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           |

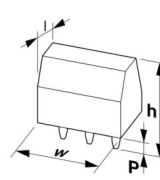
### Material data – actuating element

|                           |              |
|---------------------------|--------------|
| Color (Actuating element) | black (9005) |
|---------------------------|--------------|

## 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]           | 12.6 mm  |
| Height [h]          | 9 mm   |
| Length [l]          | 7 mm   |

### PCB design

|              |              |
|--------------|--------------|
| Pad geometry | 1.4 x 3.4 mm |
|--------------|--------------|

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## 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)                      | 1.3 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)                      | 1.6 mm              |
| 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              |

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

### Glow-wire test

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

### Ambient conditions

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

## 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 |

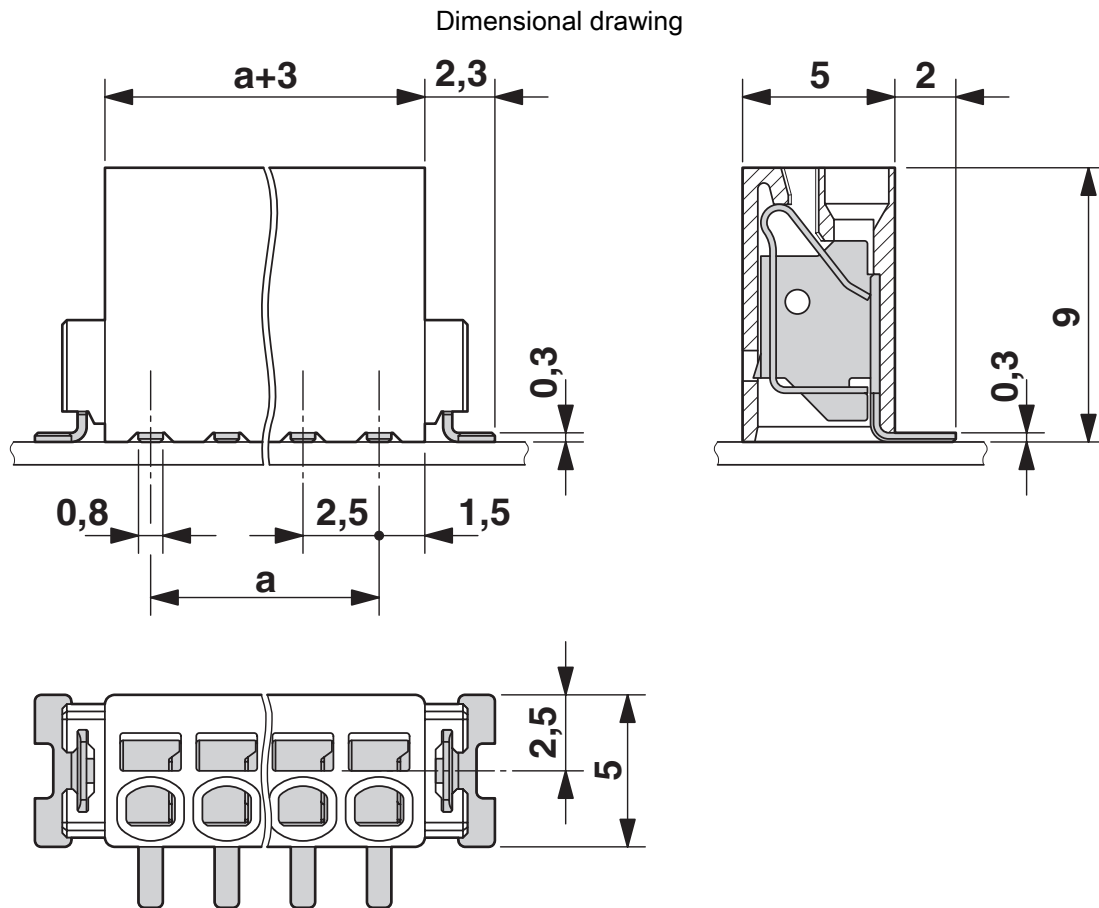
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## Drawings



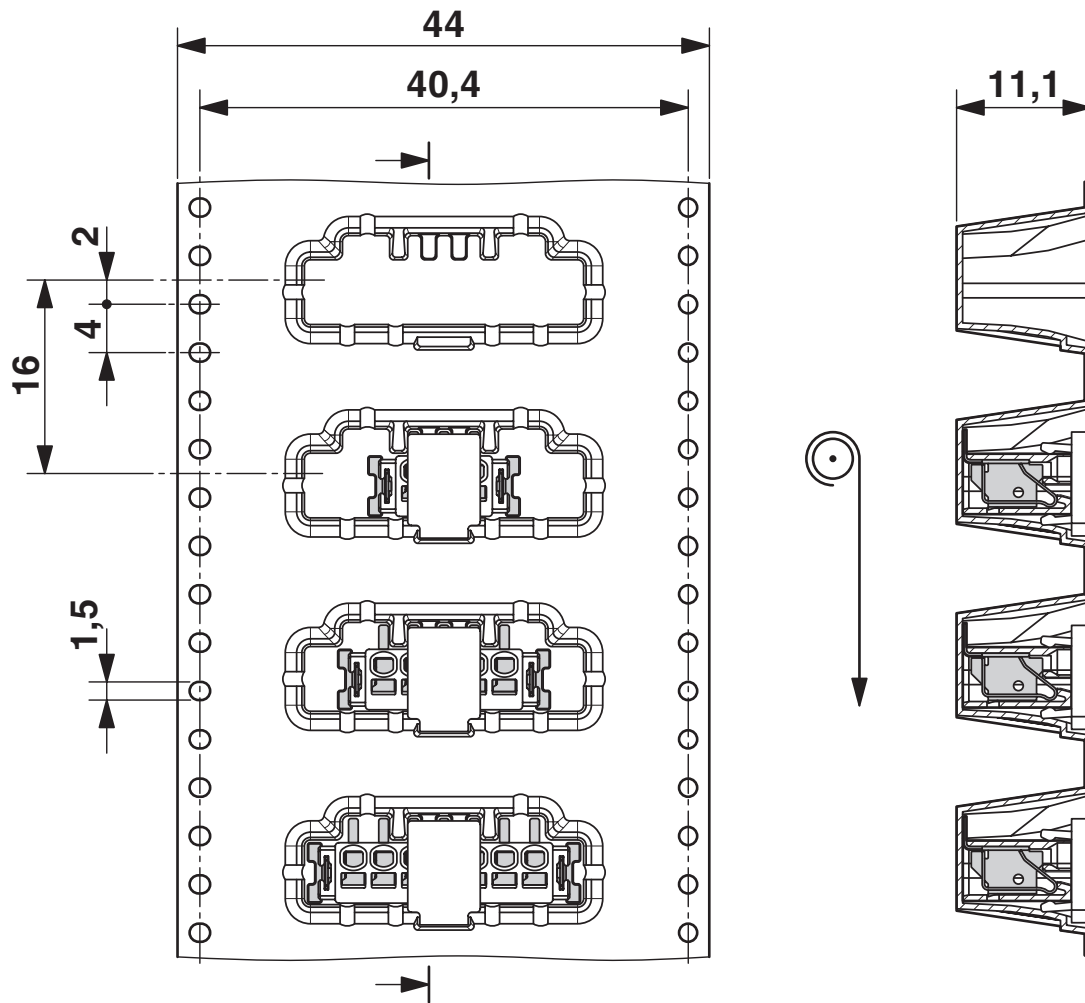
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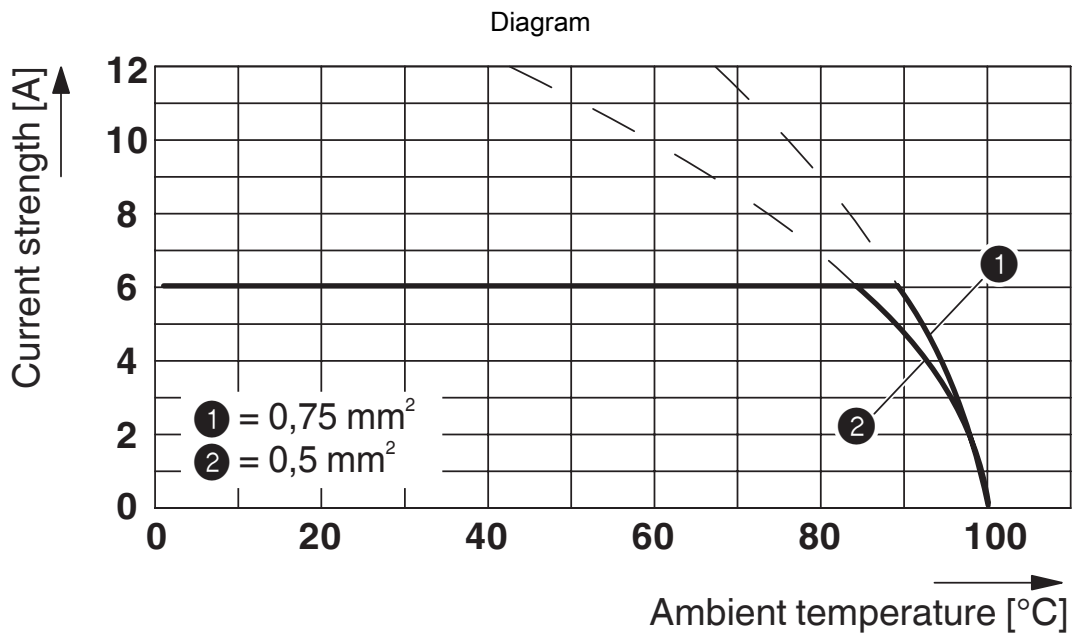


Dimensional drawing



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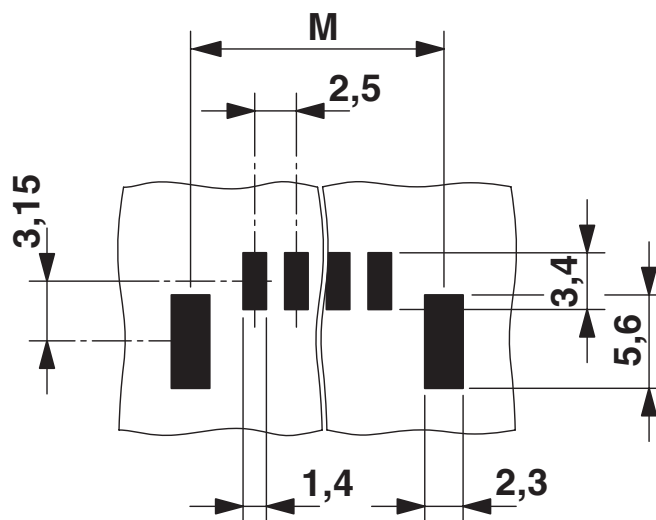
Type: PTSM 0,5/...-2,5-V SMD R44

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

Reduction factor = 1

Number of positions: 5

Drilling plan/solder pad geometry



Dimension M: 10.9 mm

# PTSM 0,5/ 3-2,5-V SMD R44 - PCB terminal block



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1771101>

|  <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 10.0 | 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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