

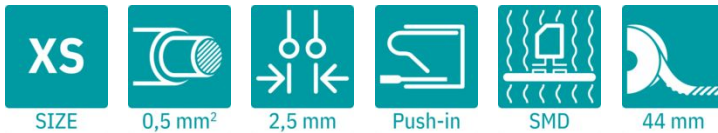
# PTSM 0,5/ 5-2,5-V SMD WH R44 - PCB terminal block



1814731

<https://www.phoenixcontact.com/nl/products/1814731>

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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: 5, number of rows: 1, number of positions per row: 5, product range: PTSM 0,5/..-V-SMD WH, pitch: 2.5 mm, connection method: Push-in spring connection, mounting: SMD soldering, conductor/PCB connection direction: 90 °, color: signal white, Pin layout: Linear pad geometry, number of solder pins per potential: 1, type of packaging: 44 mm wide tape

## Your advantages

- White design: Stable color when welding and during use
- 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                          | 1814731                        |
| Packing unit                         | 400 pc                         |
| Minimum order quantity               | 400 pc                         |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AAKDAD                         |
| Product key                          | AAKDAD                         |
| GTIN                                 | 4046356760485                  |
| Weight per piece (including packing) | 2,6 g                          |
| Weight per piece (excluding packing) | 2,6 g                          |
| Customs tariff number                | 85369010                       |
| Country of origin                    | IN                             |

## Technical data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Product family            | PTSM 0,5/...-V-SMD WH |
| Product line              | COMBICON Terminals XS |
| Number of positions       | 5                     |
| Pitch                     | 2.5 mm                |
| Number of connections     | 5                     |
| Number of rows            | 1                     |
| Number of potentials      | 5                     |
| 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)       | 63 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)        | 320 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

|               |               |
|---------------|---------------|
| Mounting type | SMD soldering |
|---------------|---------------|

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|            |                     |
|------------|---------------------|
| Pin layout | Linear pad geometry |
|------------|---------------------|

## Processing notes

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

### Material data - housing

|                                        |                     |
|----------------------------------------|---------------------|
| Color (Housing)                        | signal white (9003) |
| Insulating material                    | PA GF               |
| Insulating material group              | I                   |
| CTI according to IEC 60112             | 600                 |
| Flammability rating according to UL 94 | V0                  |

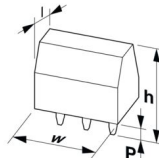
### Material data – actuating element

|                           |              |
|---------------------------|--------------|
| Color (Actuating element) | white (9010) |
|---------------------------|--------------|

## 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]           | 17.6 mm                                                                              |
| Height [h]          | 9 mm                                                                                 |
| Length [l]          | 7 mm                                                                                 |

### PCB design

|              |              |
|--------------|--------------|
| Pad geometry | 1.4 x 3.4 mm |
| Pin spacing  | 2.5 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                              | 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)                       | 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)                      | 1.5 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           |

### Glow-wire test

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

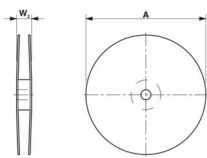
### Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| 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) |

### Ambient conditions

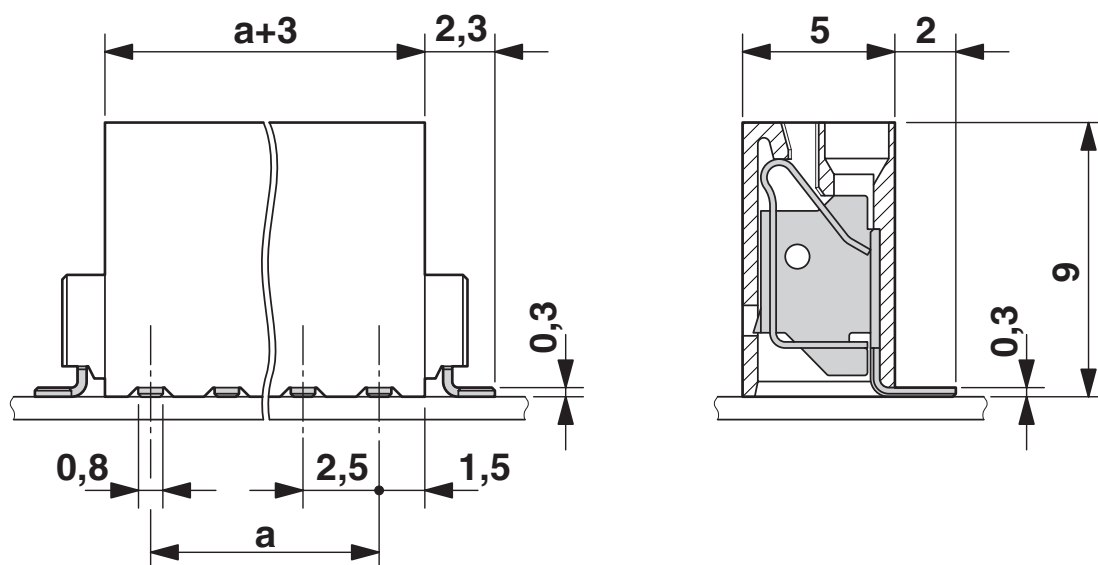
|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 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

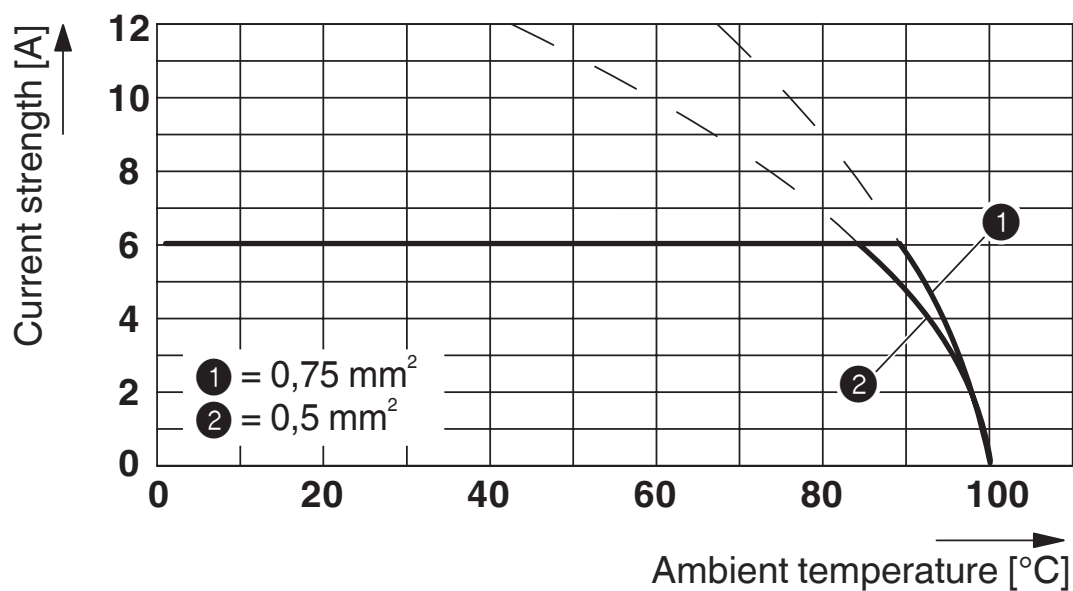
|                             |                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing         |  |
| Type of packaging           | 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                                                                      |

## Drawings

Dimensional drawing



Diagram



Type: PTSM 0,5/...-2,5-V SMD WH R44  
 Tested in accordance with DIN EN 60512-5-2:2003-01  
 Reduction factor = 1  
 Number of positions: 5

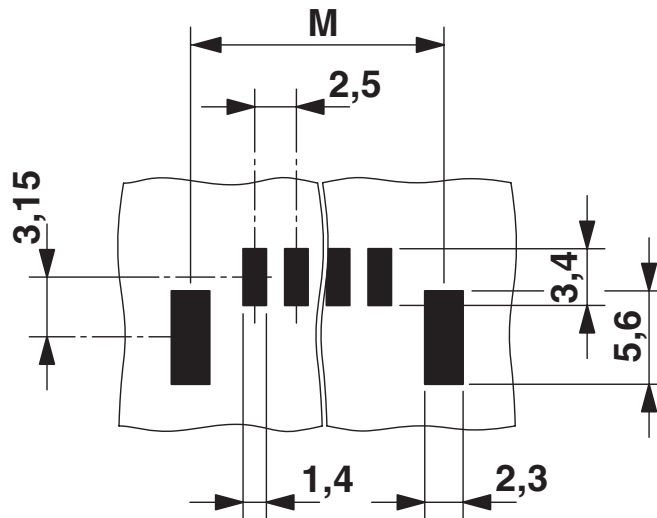
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Drilling plan/solder pad geometry



Dimension M: 15.9 mm

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/nl/products/1814731>

|  <b>UL Recognized</b><br>Approval ID: E118976-20130619 |                                |                                |                   |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                         | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| B                                                                                                                                       |                                |                                |                   |                               |
|                                                                                                                                         | 150 V                          | 5 A                            | 26 - 18           | -                             |

|  <b>cULus Recognized</b><br>Approval ID: E60425-20030527 |                                |                                |                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                           | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| B                                                                                                                                         |                                |                                |                   |                               |
|                                                                                                                                           | 150 V                          | 5 A                            | 26 - 20           | -                             |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40048725 |                                |                                |                   |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                            | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| 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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