

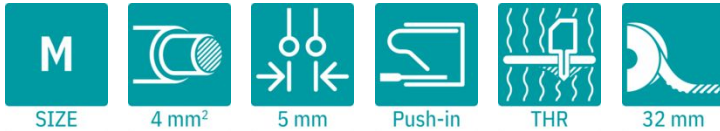
# SPT-THR 2,5/ 3-V-5,0 P20 R32 - PCB terminal block



1135334

<https://www.phoenixcontact.com/us/products/1135334>

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PCB terminal block, nominal current: 32 A, rated voltage (III/2): 400 V, nominal cross section: 4 mm<sup>2</sup>, number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: SPT 2,5/...-V-THR, pitch: 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 mm, number of solder pins per potential: 2, type of packaging: 32 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
- Intuitive operation due to color-coded actuating push button
- Operation and conductor connection from one direction enable integration into front of device
- Designed for integration into the SMT soldering process

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1135334                        |
| Packing unit                         | 80 pc                          |
| Minimum order quantity               | 80 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA13                           |
| Product key                          | AAMCAB                         |
| GTIN                                 | 4063151068936                  |
| Weight per piece (including packing) | 10.15 g                        |
| Weight per piece (excluding packing) | 9.45 g                         |
| Customs tariff number                | 85369010                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                           |                      |
|---------------------------|----------------------|
| Product type              | PCB terminal block   |
| Product family            | SPT 2,5/...-V-THR    |
| Product line              | COMBICON Terminals M |
| Number of positions       | 3                    |
| Pitch                     | 5 mm                 |
| Number of connections     | 3                    |
| Number of rows            | 1                    |
| Number of potentials      | 3                    |
| Pin layout                | Linear pinning       |
| Solder pins per potential | 2                    |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 32 A  |
| Nominal voltage $U_N$       | 400 V |
| Rated voltage (III/3)       | 320 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)        | 500 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Connection data

#### Connection technology

|                       |                   |
|-----------------------|-------------------|
| Nominal cross section | 4 mm <sup>2</sup> |
|-----------------------|-------------------|

#### Conductor connection

|   |   |
|---|---|
| Connection method   | Push-in spring connection   |
| Conductor cross-section rigid   | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Conductor connection with open terminal point)<br>0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Push-in connection) |
| Conductor cross-section flexible  | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section AWG   | 24 ... 12   |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve                   | 0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve                      | 0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>   |
| Stripping length  | 10 mm   |

### Mounting

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|               |                                |
|---------------|--------------------------------|
| 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 µm - 8 µm Sn)   |
| Metal surface soldering area (top layer) | Tin (4 µm - 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           |
| 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 | 200 °C       |

### Material data – actuating element

|  |              |
|--|--------------|
| Color (Actuating element)              | white (9010) |
| Insulating material                    | PA GF        |
| Insulating material group              | I            |
| CTI according to IEC 60112             | 600          |
| Flammability rating according to UL 94 | V0           |

## Notes

|               |  |
|---------------|--|
| Assembly note | This item is not suitable for PCB cleaning with liquids. |
|---------------|--|

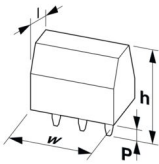
## Dimensions

# SPT-THR 2,5/ 3-V-5,0 P20 R32 - PCB terminal block



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|                       |  |
|-----------------------|--|
| Dimensional drawing   |  |
| Pitch                 | 5 mm   |
| Width [w]             | 15.8 mm  |
| Height [h]            | 21.15 mm   |
| Length [l]            | 12.8 mm  |
| Installed height      | 19.15 mm   |
| Solder pin length [P] | 2 mm   |

|               |        |
|---------------|--------|
| PCB design    |        |
| Hole diameter | 1.2 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                     |
| 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 |
|   | 4 mm <sup>2</sup> / solid / > 60 N      |
|   | 4 mm <sup>2</sup> / flexible / > 60 N   |
|   | 0.5 mm <sup>2</sup> / solid / > 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 60947-7-4:2019-01 |
| Insulating material group             | IIIa                  |

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|  |         |
|--|---------|
| Comparative tracking index (IEC 60112)                 | CTI 175 |
| Rated insulation voltage (III/3)                       | 320 V   |
| Rated surge voltage (III/3)                            | 4 kV    |
| minimum clearance value - non-homogenous field (III/3) | 3 mm    |
| minimum creepage distance (III/3)                      | 5 mm    |
| 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)                      | 4 mm    |
| Rated insulation voltage (II/2)                        | 500 V   |
| Rated surge voltage (II/2)                             | 4 kV    |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm    |
| minimum creepage distance (II/2)                       | 5 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           | 50 m/s <sup>2</sup> (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h                                    |
| Test directions        | X-, Y- and Z-axis                        |

### Glow-wire test

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

### Aging

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

### 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 ... 105 °C (Depending on the current carrying capacity/derating curve) |

## Packaging specifications

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
|---------------------|--|

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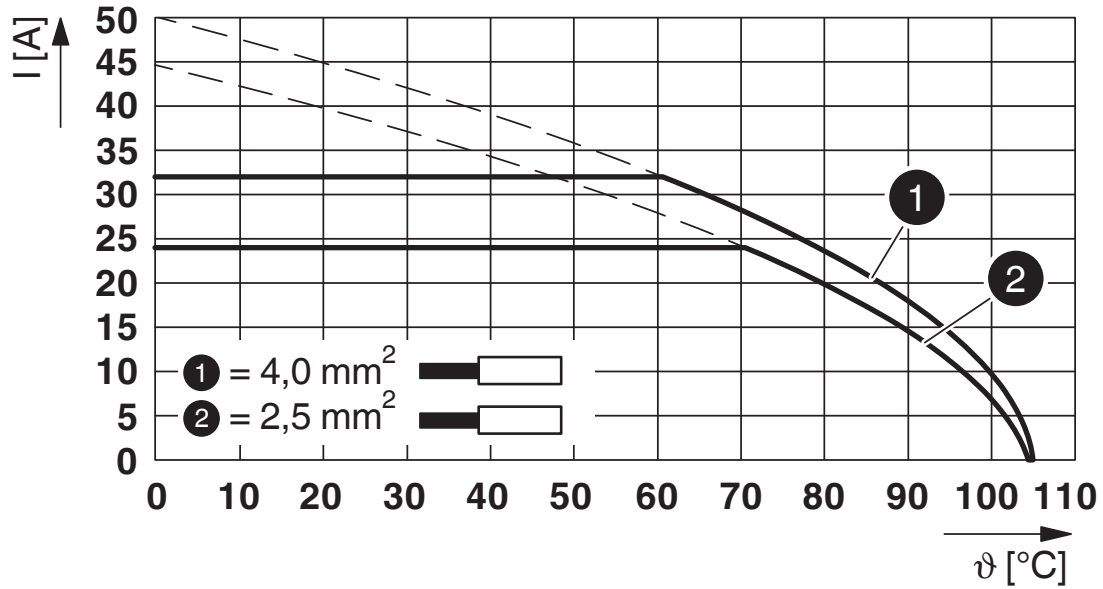
|                             |                 |
|-----------------------------|-----------------|
| Type of packaging           | 32 mm wide tape |
| [W] tape width              | 32 mm           |
| [W2] coil overall dimension | ≤ 38.4 mm       |
| [A] coil diameter           | ≤ 330 mm        |
| Outer packaging type        | Transparent-Bag |

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## Drawings

Diagram



Type: SPT-THR 2,5/...-V-5,0 P...

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1135334>

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40046113 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  |                       |                       |                   |                             |
|  | 400 V                 | 32 A                  | -                 | 0.2 - 4                     |

|  <b>cULus Recognized</b><br>Approval ID: E60425-20061129 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   |                       |                       |                   |                             |
|   | 300 V                 | 20 A                  | 24 - 12           | -                           |
| D   |                       |                       |                   |                             |
|   | 300 V                 | 10 A                  | 24 - 12           | -                           |

|  <b>UL Recognized</b><br>Approval ID: E60425-20061129 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| F  |                       |                       |                   |                             |
|  | 300 V                 | 20 A                  | 24 - 12           | -                           |

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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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.197 kg CO2e |
|---------|---------------|

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