# SPT-THR 1,5/ 4-V-5,08 P20 R56 - PCB terminal block

1823544

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Printed circuit board terminal, nominal current: 17.5 A, rated voltage (III/2): 320 V, nominal cross section: 1.5 mm$^2$, number of potentials: 4, number of rows: 1, number of positions per row: 4, product range: SPT 1,5/..-V-THR, pitch: 5.08 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: 56 mm wide tape. Suitable for CAT5

## Your advantages

- Satisfies CAT5 requirements in accordance with EN 50173 and ISO/IEC 11801

## Commercial data

| | |
|---|---|
| Item number | 1823544 |
| Packing unit | 200 pc |
| Minimum order quantity | 200 pc |
| Product key | AALCCI |
| GTIN | 4046356815369 |
| Weight per piece (including packing) | 4.881 g |
| Weight per piece (excluding packing) | 4.44 g |
| Customs tariff number | 85369010 |
| Country of origin | PL |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Printed circuit board terminal |
| Product family | SPT 1,5/..-V-THR |
| Product line | COMBICON Terminals S |
| Number of positions | 4 |
| Pitch | 5.08 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 $I_N$ | 17.5 A |
| Nominal voltage $U_N$ | 320 V |
| Rated voltage (III/3) | 250 V |
| Rated surge voltage (III/3) | 4 kV |
| Rated voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| Rated voltage (II/2) | 500 V |
| Rated surge voltage (II/2) | 4 kV |

### Data transmission

| | |
|---|---|
| Signal type | Ethernet |
| Frequency range | to 100 MHz |
| Transmission medium | Copper |
| Transmission characteristics (category) | CAT5 (IEC 11801) |
| Data transmission rate | 100 Mbps |

## Connection data

### Connection technology

| | |
|---|---|
| Nominal cross section | 1.5 mm² |

### Conductor connection

| | |
|---|---|
| Connection method | Push-in spring connection |
| Conductor cross section rigid | 0.2 mm² ... 1.5 mm² |
| Conductor cross section flexible | 0.2 mm² ... 1.5 mm² |
| Conductor cross section AWG | 24 ... 16 |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.2 mm² ... 1.5 mm² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.2 mm² ... 0.75 mm² |

| | |
|---|---|
| Stripping length | 8 mm |

## Mounting

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

Processing notes

| | |
|---|---|
| Process | Reflow/wave soldering |
| Moisture Sensitive Level | MSL 1 |
| Classification temperature $T_c$ | 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 - 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 |

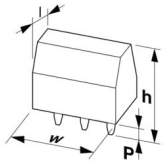
Material data – actuating element

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

| | |
|---|---|
| Note on application | The item is qualified for CAT5 Ethernet applications. For this reason, it is suited for use in IoT devices. |
| Assembly note | This item is not suitable for PCB cleaning with liquids. |

## Dimensions

| | |
|---|---|
| Dimensional drawing |   |
| Pitch | 5.08 mm |
| Width [w] | 19.24 mm |
| Height [h] | 15.7 mm |
| Length [l] | 7.7 mm |
| Installed height | 13.7 mm |
| Solder pin length [P] | 2 mm |
| Pin dimensions | 0.7 x 0.3 mm |

PCB design

| | |
|---|---|
| Pin spacing | 5.5 mm |
| Hole diameter | 1.1 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 | 0.2 mm² / solid / > 10 N |
| | 0.2 mm² / flexible / > 10 N |
| | 1.5 mm² / solid / > 40 N |
| | 1.5 mm² / flexible / > 40 N |

Flexion test

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

## 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. |

Insulation resistance

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

Air clearances and creepage distances |

| | |
|---|---|
| Specification | IEC 60947-7-4:2013-08 |
| Insulating material group | IIIa |
| Comparative tracking index (IEC 60112) | CTI 175 |
| 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) | 4 mm |
| Rated insulation voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| minimum clearance value - non-homogenous field (III/2) | 3 mm |
| minimum creepage distance (III/2) | 3.2 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 | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |

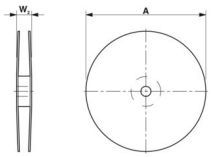
Glow-wire test

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

Ambient conditions

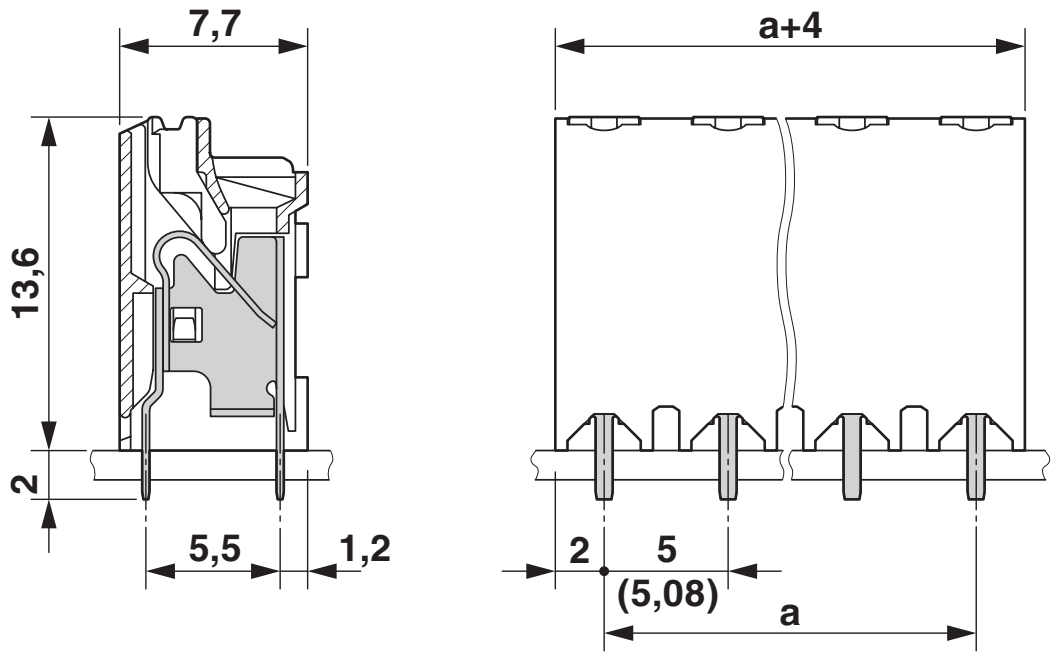
| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 105 °C (Depending on the current carrying capacity/derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |

## Packaging specifications

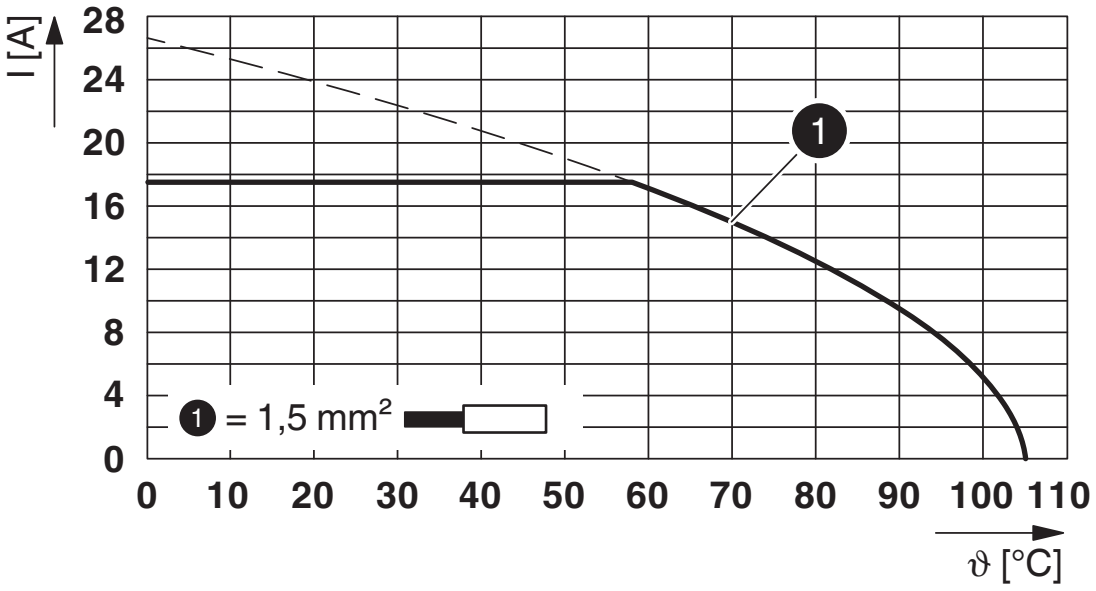
| | |
|---|---|
| Dimensional drawing |  |
| Type of packaging | 56 mm wide tape |
| [W] tape width | 56 mm |
| [W2] coil overall dimension | ≤ 62.4 mm |
| [A] coil diameter | ≤ 330 mm |
| Outer packaging type | Transparent-Bag |
| ESD level | (D) electrostatically conductive |
| Specification | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07 |

## Drawings

Dimensional drawing

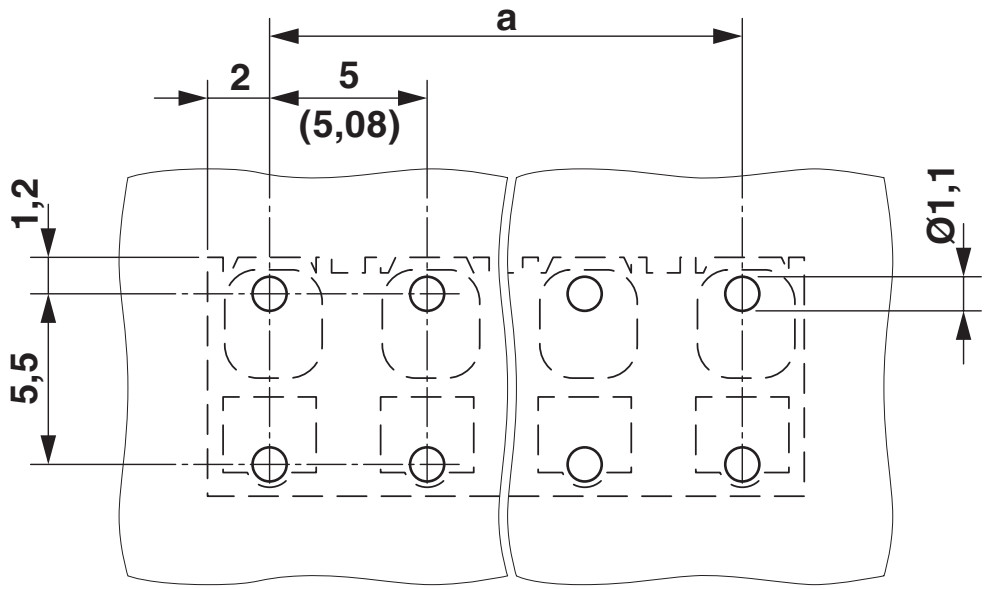



Diagram




Type: SPT-THR 1,5/...-V-5,08 P...

Drilling plan/solder pad geometry



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/1823544

**cULus Recognized**
Approval ID: E60425-20061129

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| B | | | | |
| | 300 V | 10 A | 24 - 16 | - |
| D | | | | |
| | 300 V | 10 A | 24 - 16 | - |

**VDE approval of drawings**
Approval ID: 40046113

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 320 V | 17.5 A | - | 0.2 - 1.5 |

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27460101 |
| ECLASS-15.0 | 27460101 |

### ETIM

| | |
|---|---|
| ETIM 9.0 | EC002643 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39121400 |

## 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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