

PCB terminal block - SPT-THR 1,5/ 3-H-3,5 P20 R32



1823641

<https://www.phoenixcontact.com/pc/products/1823641>

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PCB terminal block, nominal current: 13.5 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: SPT 1,5/..-H-THR, pitch: 3.5 mm, connection method: Push-in spring connection, mounting: THR soldering, conductor/PCB connection direction: 0 °, 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 use through colour coded actuation lever
- Designed for integration into the SMT soldering process
- Quick and convenient testing using integrated test option
- Operation and conductor connection from one direction enable integration into front of device
- Two solder pins reduce the mechanical strain on the soldering spots

Commercial Data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1823641 |
| Packing unit | 250 pc |
| Minimum order quantity | 250 pc |
| Note | Made to Order (non-returnable) |
| Product Key | AALCCA |
| Catalog Page | Page 11 (NTK-2014) |
| GTIN | 4046356814294 |
| Weight per Piece (including packing) | 3.08 g |
| Weight per Piece (excluding packing) | 3.08 g |
| Customs tariff number | 85369010 |
| Country of origin | PL |

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Technical Data

Product properties

| | |
|---------------------------|--------------------------------|
| Product line | COMBICON Terminals S |
| Product type | Printed circuit board terminal |
| Number of positions | 3 |
| Pitch | 3.5 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Number of potentials | 3 |
| Pin layout | Linear pinning |
| Solder pins per potential | 2 |

Electrical properties

| | |
|-----------------------------|--------|
| Nominal current I_N | 13.5 A |
| Nominal voltage U_N | 160 V |
| Degree of pollution | 3 |
| Rated voltage (III/3) | 160 V |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2) | 160 V |
| Rated surge voltage (III/2) | 2.5 kV |

Connection data

Connection technology

| | |
|-----------------------|---------------------|
| Nominal cross section | 1.5 mm ² |
|-----------------------|---------------------|

Conductor connection

| | |
|---|--|
| Connection method | Push-in spring connection |
| Conductor cross section solid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 24 ... 16 |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.2 mm ² ... 0.75 mm ² |
| Stripping length | 8 mm |

Mounting

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

Processing notes

| | |
|----------------------------------|-----------------------|
| Process | Reflow/wave soldering |
| Moisture Sensitive Level | MSL 1 |
| Classification temperature T_c | 260 °C |

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| | |
|-----------------------------|---|
| 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 () | 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 instruction: | This item is not suitable for PCB cleaning with liquids. |
|-----------------------|--|

Dimensions

| | |
|-----------------------|---------|
| Dimensional drawing | |
| Pitch | 3.5 mm |
| Width [w] | 11 mm |
| Height [h] | 9.7 mm |
| Length [l] | 13.6 mm |
| Installed height | 7.7 mm |
| Solder pin length [P] | 2 mm |

PCB design

| | |
|-------------|------|
| Pin spacing | 7 mm |
|-------------|------|

Mechanical tests

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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 mm ² / solid / > 10 N |
| | 0.2 mm ² / flexible / > 10 N |
| | 1.5 mm ² / solid / > 40 N |
| | 1.5 mm ² / flexible / > 40 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 60947-7-4:2013-08 |
| Insulating material group | IIIa |
| Comparative tracking index (IEC 60112) | CTI 175 |
| Rated insulation voltage (III/3) | 160 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) | 2.5 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) | 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) | 3.2 mm |

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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) |
| Sweep speed | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |

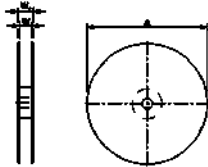
Glow-wire test

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

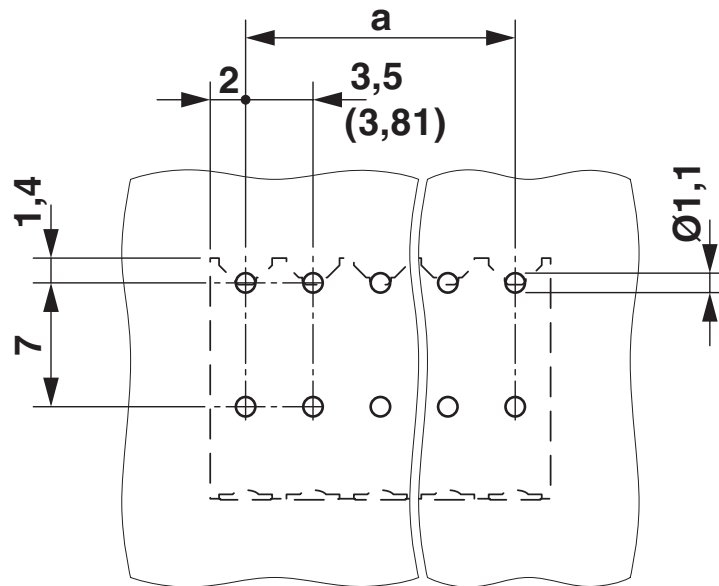
| | |
|-----------------------------|--|
| Dimensional drawing |  |
| Type of packaging | 32 mm wide tape |
| [W] tape width | 32 mm |
| [W2] coil overall dimension | 38.4 mm |
| [A] coil diameter | 330 mm |
| Outer packaging type | Transparent-Bag |
| ESD level | (D) electrostatically conductive |
| Specification | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07 |

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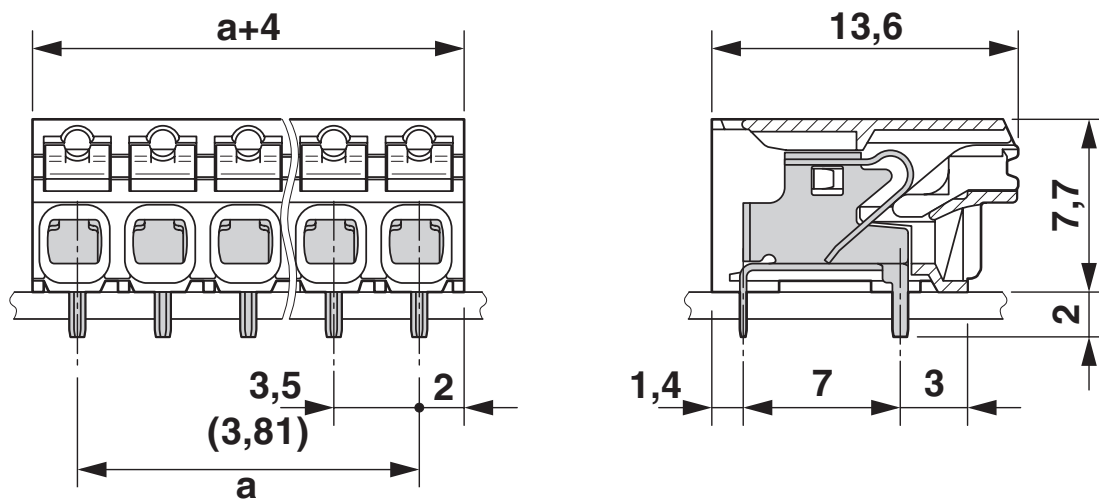
<https://www.phoenixcontact.com/pc/products/1823641>

Drawings

Drilling plan/solder pad geometry



Dimensional drawing

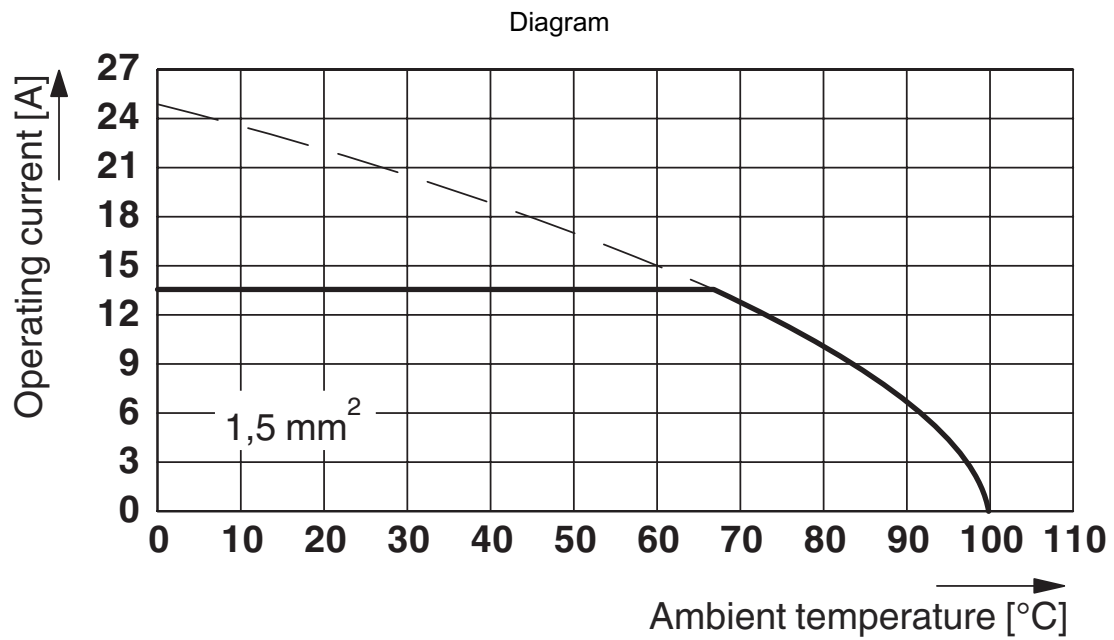


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Type: SPT-THR 1,5/ 5-H-3,5(3,81) P26

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

Reduction factor = 1

Number of positions: 5

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Approvals



EAC

Approval ID: B.01687



cULus Recognized

Approval ID: E60425-20061129

| | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|-------------|-----------------------|-----------------------|-------------------|-----------------------------|
| Use group B | | | | |
| | 300 V | 10 A | 24 - 16 | - |
| Use group D | | | | |
| | 300 V | 10 A | 24 - 16 | - |



VDE Zeichengenehmigung

Approval ID: 40046113

| | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | 160 V | 13.5 A | - | 0.2 - 1.5 |

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Classifications

ECLASS

| | |
|---------------|----------|
| ECLASS-9.0 | 27440401 |
| ECLASS-10.0.1 | 27440401 |
| ECLASS-11.0 | 27460101 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC002643 |
|----------|----------|

UNSPSC

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

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Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

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Accessories

Screwdriver

Screwdriver - SZS 0,4X2,5 VDE - 1205037

<https://www.phoenixcontact.com/pc/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

Ferrule

Ferrule - A 0,5 - 8 - 3202481

<https://www.phoenixcontact.com/pc/products/3202481>



Ferrule, length: 8 mm, color: silver

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<https://www.phoenixcontact.com/pc/products/1823641>

Ferrule

Ferrule - A 0,75- 8 - 3202504

<https://www.phoenixcontact.com/pc/products/3202504>



Ferrule, length: 8 mm, color: silver

Ferrule

Ferrule - A 1 - 8 - 3202517

<https://www.phoenixcontact.com/pc/products/3202517>



Ferrule, length: 8 mm, color: silver

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<https://www.phoenixcontact.com/pc/products/1823641>

Ferrule

Ferrule - AI 0,25- 8 YE - 3203037

<https://www.phoenixcontact.com/pc/products/3203037>



Ferrule, sleeve length: 8 mm, length: 12.5 mm, color: yellow

Ferrule

Ferrule - AI 0,5 - 8 WH - 3200014

<https://www.phoenixcontact.com/pc/products/3200014>



Ferrule, sleeve length: 8 mm, length: 14 mm, color: white

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Ferrule

Ferrule - AI 0,5 - 8 WH -1000 - 3200881

<https://www.phoenixcontact.com/pc/products/3200881>



Ferrule, sleeve length: 8 mm, length: 14 mm, color: white

Ferrule

Ferrule - AI 0,75- 8 GY - 3200519

<https://www.phoenixcontact.com/pc/products/3200519>



Ferrule, sleeve length: 8 mm, length: 14 mm, color: gray

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Ferrule

Ferrule - Al 0,75- 8 GY -1000 - 3200894

<https://www.phoenixcontact.com/pc/products/3200894>

Ferrule, sleeve length: 8 mm, length: 14 mm, color: gray



Crimping pliers

Crimping pliers - CRIMPFOX 6 - 1212034

<https://www.phoenixcontact.com/pc/products/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

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