

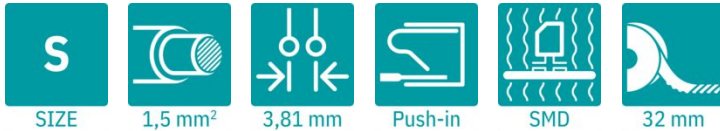
SPT-SMD 1,5/ 3-V-3,81 R32 - PCB terminal block



1824200

<https://www.phoenixcontact.com/us/products/1824200>

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Printed circuit board terminal, nominal current: 17.5 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/...-V-SMD, pitch: 3.81 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: 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
- Designed for integration into the SMT soldering process
- Operation and conductor connection from one direction enable integration into front of device
- Quick and convenient testing using integrated test option
- Two soldering spots per position reduce the mechanical strain on the soldering spots

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1824200 |
| Packing unit | 200 pc |
| Minimum order quantity | 200 pc |
| Note | Made to order (non-returnable) |
| Sales key | AA12 |
| Product key | AALDAF |
| GTIN | 4046356816304 |
| Weight per piece (including packing) | 3.69 g |
| Weight per piece (excluding packing) | 3.69 g |
| Customs tariff number | 85369010 |
| Country of origin | PL |

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Technical data

Product properties

| | |
|---------------------------|--------------------------------|
| Product type | Printed circuit board terminal |
| Product family | SPT 1,5/...-V-SMD |
| Product line | COMBICON Terminals S |
| Number of positions | 3 |
| Pitch | 3.81 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Number of potentials | 3 |
| Pin layout | Linear pad geometry |
| Solder pins per potential | 2 |

Electrical properties

Properties

| | |
|-----------------------------|--------|
| Nominal current I_N | 17.5 A |
| Nominal voltage U_N | 160 V |
| 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 |
| Rated voltage (II/2) | 320 V |
| Rated surge voltage (II/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 rigid | 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 | SMD soldering |
| Pin layout | Linear pad geometry |

Processing notes

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| | |
|----------------------------------|------------------|
| 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 μ m - 8 μ m Sn) |
| Metal surface soldering area (top layer) | Tin (4 μ m - 8 μ 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 |

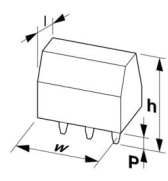
Material data – actuating element

| | |
|--|--------------|
| Color (Actuating element) | 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

| | |
|---------------------|--|
| Dimensional drawing |  |
| Pitch | 3.81 mm |
| Width [w] | 11.62 mm |
| Height [h] | 7.7 mm |
| Length [l] | 13.6 mm |
| Pin dimensions | 0.7 x 0.3 mm |

PCB design

| | |
|--------------|------------|
| Pad geometry | 1.6 x 4 mm |
|--------------|------------|

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| | |
|-------------|------|
| Pin spacing | 7 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 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 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 60664-1:2007-04 |
| 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 |

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

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 |

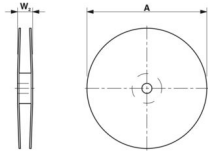
Glow-wire test

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

Ambient conditions

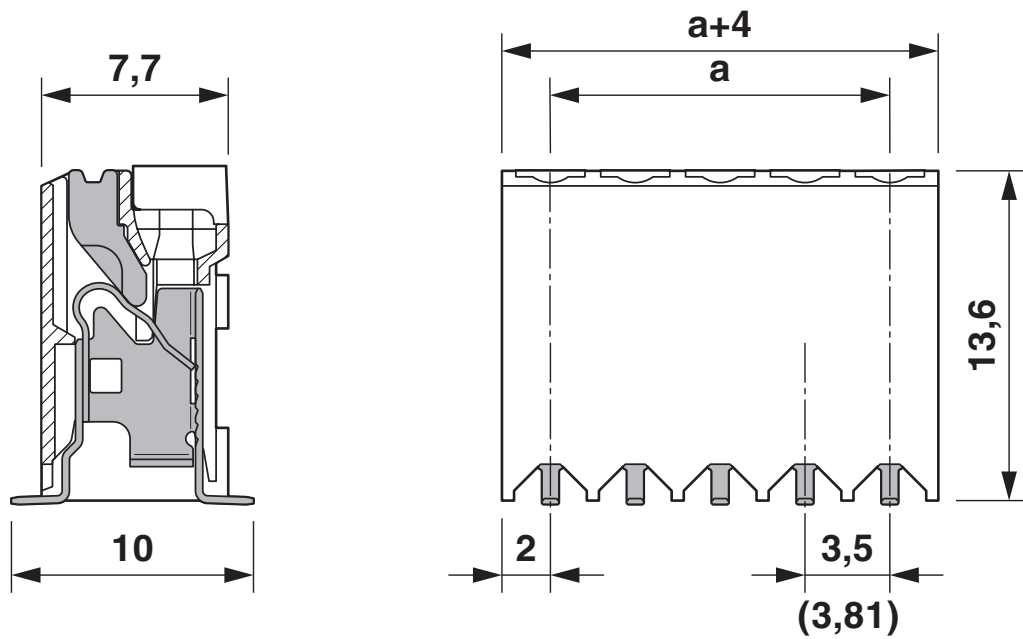
| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 105 °C (Depending on the current carrying capacity/derating curve)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

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 |

Drawings

Dimensional drawing



Diagram



Type: SPT-SMD 1,5/...-V-3,81 R...

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Drilling plan/solder pad geometry



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1824200>

|  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 | 160 V | 17.5 A | - | 0.2 - 1.5 |

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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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