

SPTAF 1/ 3-3,5-LL - PCB terminal block



1864299

<https://www.phoenixcontact.com/us/products/1864299>

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Printed circuit board terminal, nominal current: 13.5 A, rated voltage (III/2): 160 V, nominal cross section: 1 mm², number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: SPTAF 1/..-LL, pitch: 3.5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 2.6 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard

Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Finger-operated and fixable release button for very convenient operation
- Small component size for applications where space is at a premium
- Quick and convenient testing using integrated test option

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1864299 |
| Packing unit | 140 pc |
| Minimum order quantity | 140 pc |
| Sales key | AA12 |
| Product key | AALBGL |
| GTIN | 4055626246277 |
| Weight per piece (including packing) | 1.756 g |
| Weight per piece (excluding packing) | 1.637 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 | SPTAF 1/...-LL |
| Product line | COMBICON Terminals S |
| 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

Properties

| | |
|-----------------------------|--------|
| Nominal current I_N | 13.5 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 mm ² |
|-----------------------|-------------------|

Conductor connection

| | |
|---|---|
| Connection method | Push-in spring connection |
| Conductor cross-section rigid | 0.2 mm ² ... 0.75 mm ² (When connecting and positioning a rigid 0.75 mm ² conductor, the mechanical transverse forces that can act on the terminal block must be absorbed by lateral support.) 0.34 mm ² ... 0.75 mm ² (Push-in connection) |
| Conductor cross-section flexible | 0.2 mm ² ... 1 mm ² |
| Conductor cross-section AWG | 24 ... 18 |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm ² ... 0.5 mm ² (Conductor connection with open terminal point) 0.5 mm ² ... 0.5 mm ² (Push-in connection) |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 0.5 mm ² (Conductor connection with open terminal point) 0.5 mm ² ... 0.5 mm ² (Push-in connection) |
| Stripping length | 8 mm |

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Mounting

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

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 (2 μm - 4 μm Sn) |
| Metal surface soldering area (top layer) | Tin (2 μm - 4 μm Sn) |

Material data - housing

| | |
|---|--------------|
| Color (Housing) | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| 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 | 125 °C |

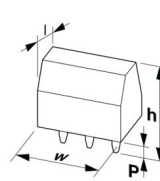
Material data – actuating element

| | |
|--|---------------|
| Color (Actuating element) | orange (2003) |
| Insulating material | PBT |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 275 |
| Flammability rating according to UL 94 | V0 |

Notes

| | |
|---------------------|---|
| Note on application | Maximum permissible outer diameter of the wire insulation ≤ 3 mm |
|---------------------|---|

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Pitch | 3.5 mm |
| Width [w] | 12 mm |

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| | |
|-----------------------|---------------|
| Height [h] | 13.5 mm |
| Length [l] | 11 mm |
| Installed height | 10.9 mm |
| Solder pin length [P] | 2.6 mm |
| Pin dimensions | 0.75 x 0.3 mm |

PCB design

| | |
|---------------|--------|
| Pin spacing | 5 mm |
| Hole diameter | 1.1 mm |

Mechanical tests

Test for conductor damage and slackening

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |

Repeated connection and disconnection

| | |
|---------------|---------------------|
| 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 ² / solid / > 10 N |
| | 0.25 mm ² / flexible / > 10 N |
| | 1.5 mm ² / solid / > 40 N |
| | 1.5 mm ² / flexible / > 40 N |

Electrical tests

Temperature-rise test

| | |
|-----------------------------------|--|
| Specification | IEC 60947-7-4:2013-08 |
| 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 60947-7-4:2013-08 |
|---------------|-----------------------|

Insulation resistance

| | |
|--|-----------------------|
| Specification | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 5 MΩ |

Air clearances and creepage distances |

| | |
|--|----------------------------------|
| Specification | IEC 60947-1:2007-06 + A1:2010-12 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 600 |
| 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 |

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| | |
|--|--------|
| minimum creepage distance (III/3) | 2 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) | 0.8 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 60695-2-10:2013-04 |
| Temperature | 850 °C |
| Time of exposure | 5 s |

Aging

| | |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2013-08 |
|---------------|-----------------------|

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) |

Packaging specifications

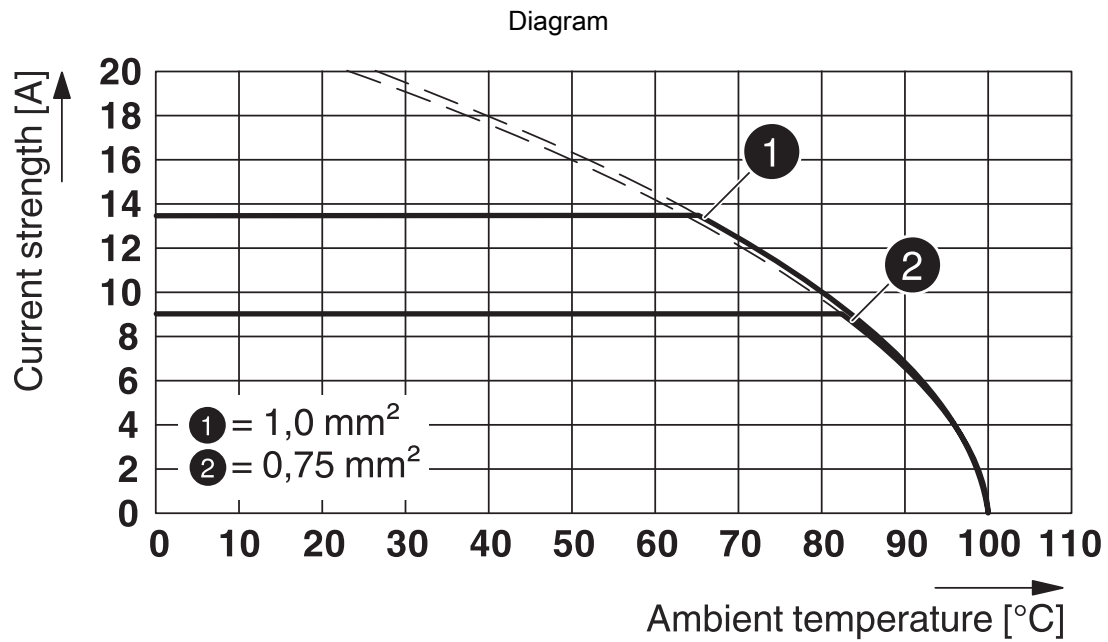
| | |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

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Drawings



Type: SPTAF 1/...-3,5-LL

Drilling plan/solder pad geometry



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1864299>

|  cULus Recognized Approval ID: E60425-20061129 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| Field wiring | 300 V | 7 A | 24 - 18 | - |
| D | | | | |
| Field wiring | 300 V | 7 A | 24 - 18 | - |

|  VDE approval of drawings Approval ID: 40047107 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 160 V | 13.5 A | - | 0.2 - 1 |

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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 | 0.053 kg CO2e |
|---------|---------------|

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