

# SPT 2,5/12-V-5,0GYPIN3,5BD1-12 - PCB terminal block



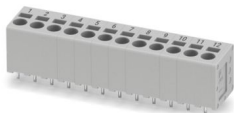
1778502

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PCB terminal block, nominal current: 24 A, rated voltage (III/2): 400 V, nominal cross section: 2.5 mm<sup>2</sup>, number of potentials: 12, number of rows: 1, number of positions per row: 12, product range: SPT 2,5/..-V, pitch: 5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 90 °, color: gray, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard



## Product description

Various pin lengths for front and rear soldering pins, see product family drawing

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Clamping space opened by means of fixed screwdriver enables convenient conductor connection
- 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                          | 1778502                        |
| Packing unit                         | 40 pc                          |
| Minimum order quantity               | 40 pc                          |
| Note                                 | Made to order (non-returnable) |
| Product key                          | AAMBFF                         |
| GTIN                                 | 4046356526722                  |
| Weight per piece (including packing) | 15.391 g                       |
| Weight per piece (excluding packing) | 14.521 g                       |
| Country of origin                    | DE                             |

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## Technical data

### Product properties

|                           |                      |
|---------------------------|----------------------|
| Product type              | PCB terminal block   |
| Product family            | SPT 2,5/...-V        |
| Product line              | COMBICON Terminals M |
| Number of positions       | 12                   |
| Pitch                     | 5 mm                 |
| Number of connections     | 12                   |
| Number of rows            | 1                    |
| Number of potentials      | 12                   |
| Pin layout                | Linear pinning       |
| Solder pins per potential | 2                    |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 24 A  |
| Nominal voltage $U_N$       | 400 V |
| Rated voltage (III/3)       | 250 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)        | 630 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Connection data

#### Connection technology

|                       |                     |
|-----------------------|---------------------|
| Nominal cross section | 2.5 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>0.34 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Push-in connection) |
| Conductor cross-section flexible  | 0.2 mm <sup>2</sup> ... 2.5 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> (Stripping length 8 mm)   |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve    | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (Stripping length 8 mm)   |
| Stripping length  | 10 mm  |

### Mounting

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

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## Material specifications

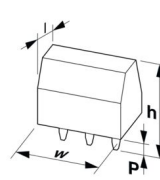
### Material data - contact

|  |  |
|--|--|
| 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)   | gray (7042) |
| 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      |

## Dimensions

|                       |  |
|-----------------------|--|
| Dimensional drawing   |  |
| Pitch                 | 5 mm   |
| Width [w]             | 61.4 mm  |
| Height [h]            | 17.9 mm  |
| Length [l]            | 13.5 mm  |
| Installed height      | 14.4 mm  |
| Solder pin length [P] | 3.5 mm   |
| Pin dimensions        | 0.8 x 0.8 mm   |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 8.2 mm |
| Hole diameter | 1.2 mm |

## Mechanical tests

### Test for conductor damage and slackening

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

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## 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      |
|   | 2.5 mm <sup>2</sup> / flexible / > 50 N |
|   | 0.34 mm <sup>2</sup> / solid / > 15 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                              | I                     |
| Comparative tracking index (IEC 60112)                 | CTI 600               |
| 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)                      | 3.2 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)                      | 3 mm                  |
| Rated insulation voltage (II/2)                        | 630 V                 |
| Rated surge voltage (II/2)                             | 4 kV                  |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm                  |
| minimum creepage distance (II/2)                       | 3.2 mm                |

## Environmental and real-life conditions

### Vibration test

|               |                             |
|---------------|-----------------------------|
| Specification | IEC 60068-2-6:1995-03       |
| Frequency     | 10 - 150 - 10 Hz            |
| Sweep speed   | 1 octave/min                |
| Amplitude     | 0.35 mm (10 Hz ... 60.1 Hz) |

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

## 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

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

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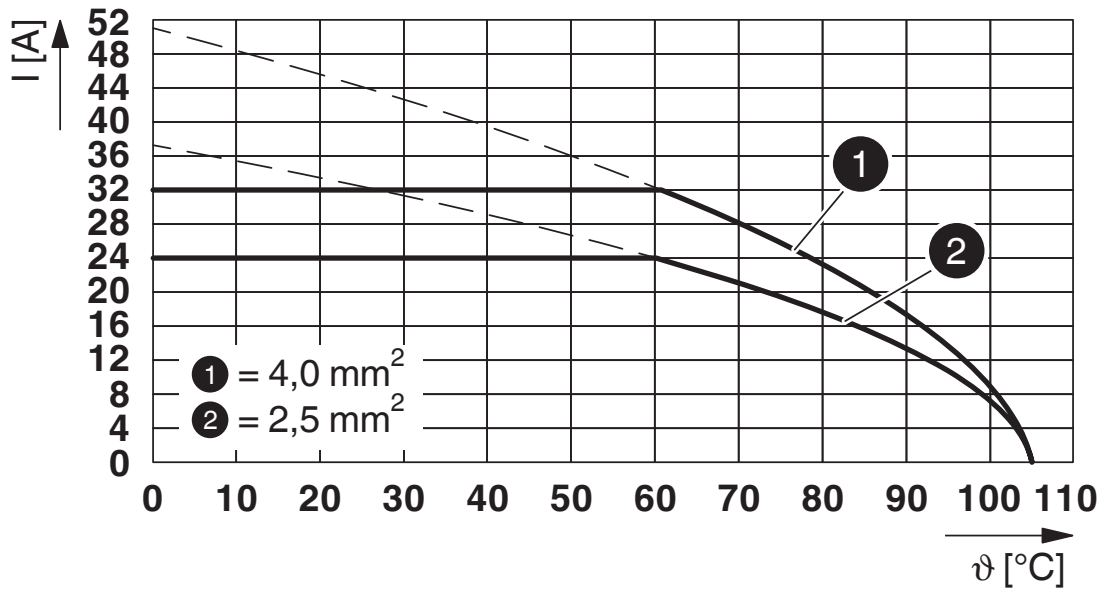


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## Drawings

Diagram



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

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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 | 0.151 kg CO2e |
|---------|---------------|

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