

# SPT 5/ 4-V-7,5-ZB GY - PCB terminal block



1859039

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Printed circuit board terminal, nominal current: 41 A, rated voltage (III/2): 630 V, nominal cross section: 6 mm<sup>2</sup>, number of potentials: 4, number of rows: 1, number of positions per row: 4, product range: SPT 5/..-V, pitch: 7.5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 90 °, color: gray, Pin layout: Zigzag pinning W, Solder pin [P]: 4.6 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
- Clamping space opened by means of fixed screwdriver enables convenient conductor connection
- Vertical connection enables multi-row arrangement on the PCB

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1859039       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA14          |
| Product key                          | AANBBB        |
| GTIN                                 | 4055626076775 |
| Weight per piece (including packing) | 15.4 g        |
| Weight per piece (excluding packing) | 14.604 g      |
| Customs tariff number                | 85369010      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | SPT 5/..-V                     |
| Product line              | COMBICON Terminals L           |
| Number of positions       | 4                              |
| Pitch                     | 7.5 mm                         |
| Number of connections     | 4                              |
| Number of rows            | 1                              |
| Number of potentials      | 4                              |
| Pin layout                | Zigzag pinning W               |
| Solder pins per potential | 2                              |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 41 A   |
| Nominal voltage $U_N$       | 630 V  |
| Rated voltage (III/3)       | 630 V  |
| Rated surge voltage (III/3) | 6 kV   |
| Rated voltage (III/2)       | 630 V  |
| Rated surge voltage (III/2) | 6 kV   |
| Rated voltage (II/2)        | 1000 V |
| Rated surge voltage (II/2)  | 6 kV   |

### Connection data

#### Connection technology

|                       |                   |
|-----------------------|-------------------|
| Nominal cross section | 6 mm <sup>2</sup> |
|-----------------------|-------------------|

#### Conductor connection

|                                                                                           |                                                                                            |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Connection method                                                                         | Push-in spring connection                                                                  |
| Conductor cross-section rigid                                                             | 0.2 mm <sup>2</sup> ... 10 mm <sup>2</sup> (Conductor connection with open terminal point) |
|                                                                                           | 0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup> (Push-in connection)                           |
| Conductor cross-section flexible                                                          | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                  |
| Conductor cross-section AWG                                                               | 24 ... 8                                                                                   |
| Conductor cross-section flexible, with ferrule without plastic sleeve                     | 0.25 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                 |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve                      | 0.25 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                 |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                                               |
| Stripping length                                                                          | 15 mm                                                                                      |

### Mounting

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|               |                  |
|---------------|------------------|
| Mounting type | Wave soldering   |
| Pin layout    | Zigzag pinning W |

## Material specifications

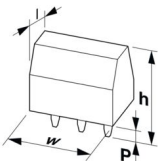
### Material data - contact

|                                          |                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                         | Cu alloy                                                                         |
| Surface characteristics                  | 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)                                                   | 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                 | 7.5 mm                                                                               |
| Width [w]             | 31.8 mm                                                                              |
| Height [h]            | 28.75 mm                                                                             |
| Length [l]            | 18.5 mm                                                                              |
| Installed height      | 24.15 mm                                                                             |
| Solder pin length [P] | 4.6 mm                                                                               |
| Pin dimensions        | 1.7 x 0.8 mm                                                                         |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 14 mm  |
| Hole diameter | 2.1 mm |

## Mechanical tests

### Connection test

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|               |                       |
|---------------|-----------------------|
| 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 <sup>2</sup> / solid / > 10 N    |
|                                                                             | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|                                                                             | 10 mm <sup>2</sup> / solid / > 90 N     |
|                                                                             | 6 mm <sup>2</sup> / flexible / > 80 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 60664-1:1992-10 + A1:2000-02 + A2:2002-05 |
| Insulating material group                              | I                                             |
| Comparative tracking index (IEC 60112)                 | CTI 600                                       |
| Rated insulation voltage (III/3)                       | 630 V                                         |
| Rated surge voltage (III/3)                            | 6 kV                                          |
| minimum clearance value - non-homogenous field (III/3) | 5.5 mm                                        |
| minimum creepage distance (III/3)                      | 8 mm                                          |
| Rated insulation voltage (III/2)                       | 630 V                                         |
| Rated surge voltage (III/2)                            | 6 kV                                          |
| minimum clearance value - non-homogenous field (III/2) | 5.5 mm                                        |
| minimum creepage distance (III/2)                      | 5.5 mm                                        |
| Rated insulation voltage (II/2)                        | 1000 V                                        |
| Rated surge voltage (II/2)                             | 6 kV                                          |
| minimum clearance value - non-homogenous field (II/2)  | 5.5 mm                                        |
| minimum creepage distance (II/2)                       | 5.5 mm                                        |

## Environmental and real-life conditions

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## 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) |
| 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                 |

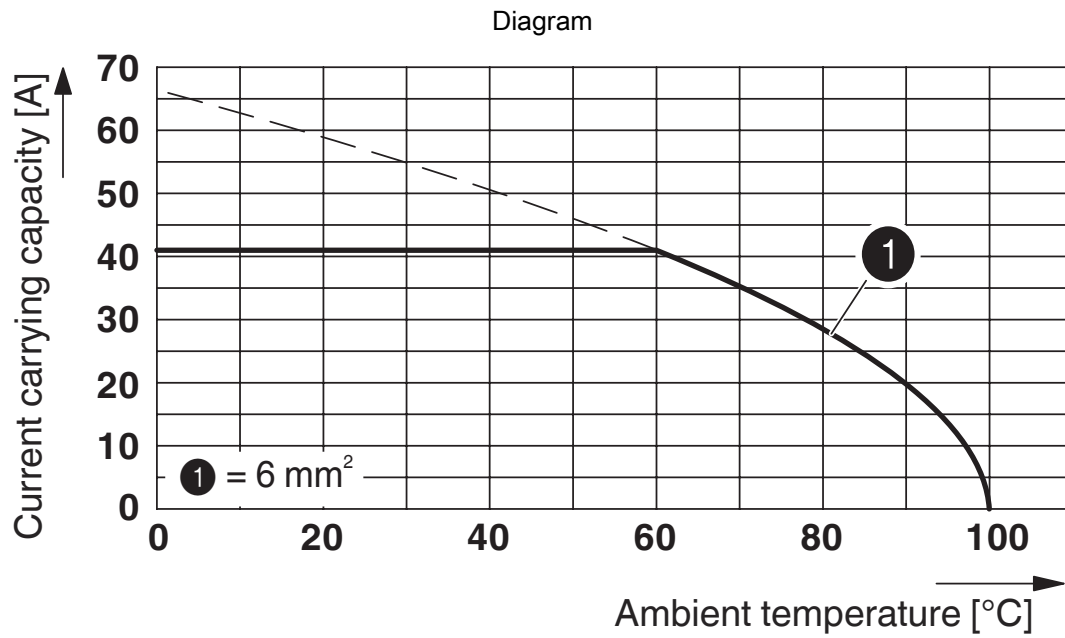
## Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 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

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

## Drawings



Type: SPT 5/...-V-7,5

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1859039>

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40042909 |                       |                       |                   |                             |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                          | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                    |                       |                       |                   |                             |
|                                                                                                                                          | 1000 V                | 41 A                  | -                 | 0.2 - 10                    |

|  <b>cULus Recognized</b><br>Approval ID: E60425-20061129 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 600 V                 | 36 A                  | 24 - 8            | -                           |
| C                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 600 V                 | 36 A                  | 24 - 8            | -                           |

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## Classifications

### ECLASS

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

### ETIM

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