

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Printed circuit board terminal, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of potentials: 5, number of rows: 1, number of positions per row: 5, product range: SPT 16/...-V, pitch: 10 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 90 °, color: green, Pin layout: Zigzag pinning W, Solder pin [P]: 4.1 mm, number of solder pins per potential: 3, 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
- Unrestricted 600-V-UL approval thanks to compact zig-zag pinning
- Vertical connection enables multi-row arrangement on the PCB

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1707029       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Product key                          | AAOBCB        |
| GTIN                                 | 4046356894746 |
| Weight per piece (including packing) | 38.67 g       |
| Weight per piece (excluding packing) | 12 g          |
| Country of origin                    | BG            |

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Technical data

### Product properties

|                           |                                  |
|---------------------------|----------------------------------|
| Product type              | Printed circuit board terminal   |
| Product family            | SPT 16/...-V                     |
| Product line              | COMBICON Terminals XL            |
| Type                      | PC terminal block can be aligned |
| Number of positions       | 5                                |
| Pitch                     | 10 mm                            |
| Number of connections     | 5                                |
| Number of rows            | 1                                |
| Number of potentials      | 5                                |
| Pin layout                | Zigzag pinning W                 |
| Solder pins per potential | 3                                |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 76 A   |
| Nominal voltage $U_N$       | 1000 V |
| Rated voltage (III/3)       | 1000 V |
| Rated surge voltage (III/3) | 8 kV   |
| Rated voltage (III/2)       | 1000 V |
| Rated surge voltage (III/2) | 8 kV   |
| Rated voltage (II/2)        | 1000 V |
| Rated surge voltage (II/2)  | 6 kV   |

### Connection data

#### Connection technology

|                       |                                  |
|-----------------------|----------------------------------|
| Type                  | PC terminal block can be aligned |
| Nominal cross section | 16 mm <sup>2</sup>               |

#### Conductor connection

|                                                                                           |                                                                                             |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Connection method                                                                         | Push-in spring connection                                                                   |
| Conductor cross-section rigid                                                             | 0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup> (Conductor connection with open terminal point) |
|                                                                                           | 0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup> (Push-in connection)                            |
| Conductor cross-section flexible                                                          | 0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>                                                 |
| Conductor cross-section AWG                                                               | 20 ... 4                                                                                    |
| Conductor cross-section flexible, with ferrule without plastic sleeve                     | 0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>                                                 |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve                      | 0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup>                                                 |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.75 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                  |
| Stripping length                                                                          | 18 mm                                                                                       |

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Mounting

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

## Material specifications

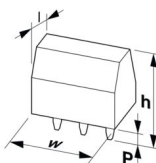
### Material data - contact

|                                          |                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------|
| 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 (10 - 16 µm Sn)                                                              |
| Metal surface soldering area (top layer) | Tin (10 - 16 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       |

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 10 mm                                                                                |
| Width [w]             | 51.8 mm                                                                              |
| Height [h]            | 35.4 mm                                                                              |
| Length [l]            | 24.7 mm                                                                              |
| Installed height      | 31.3 mm                                                                              |
| Solder pin length [P] | 4.1 mm                                                                               |
| Pin dimensions        | 1.2 x 1 mm                                                                           |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 15 mm  |
| Hole diameter | 1.7 mm |

## Mechanical tests

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| 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 | 0.75 mm <sup>2</sup> / solid / > 30 N    |
|                                                                             | 0.75 mm <sup>2</sup> / flexible / > 30 N |
|                                                                             | 16 mm <sup>2</sup> / solid / > 100 N     |
|                                                                             | 16 mm <sup>2</sup> / flexible / > 100 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)                       | 1000 V                |
| Rated surge voltage (III/3)                            | 8 kV                  |
| minimum clearance value - non-homogenous field (III/3) | 8 mm                  |
| minimum creepage distance (III/3)                      | 12.5 mm               |
| Rated insulation voltage (III/2)                       | 1000 V                |
| Rated surge voltage (III/2)                            | 8 kV                  |
| minimum clearance value - non-homogenous field (III/2) | 8 mm                  |
| minimum creepage distance (III/2)                      | 8 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

### Vibration test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:1995-03 |
|---------------|-----------------------|

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

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

## Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 105 °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 |
|-------------------|---------------------|

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block

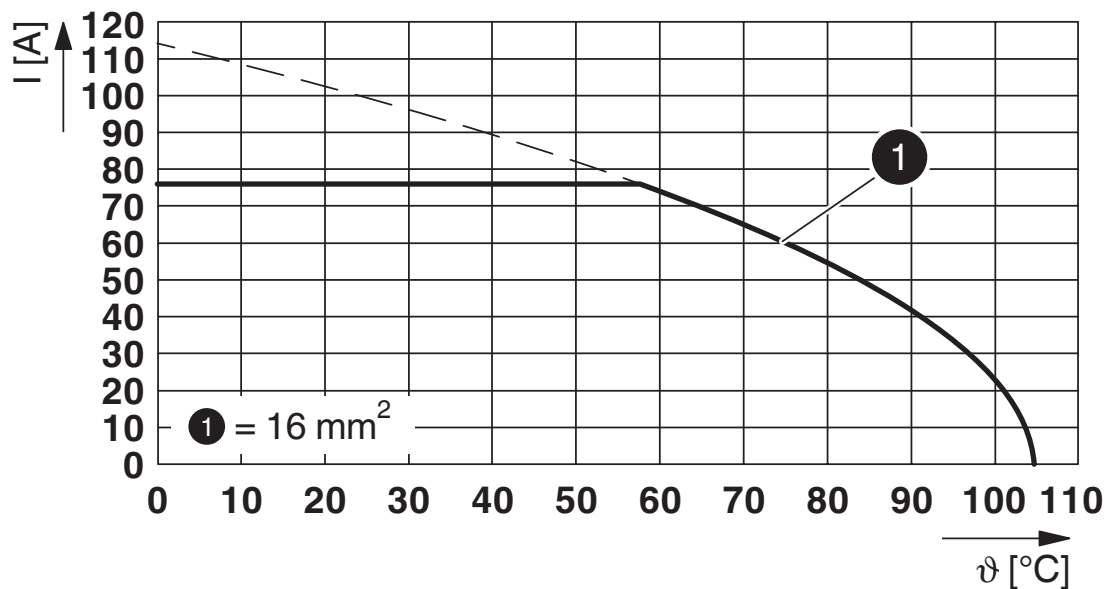


1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Drawings

Diagram



Type: SPT 16/...-V-10,0-ZB

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1707029>

|  <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                | 76 A                  | -                 | 0.75 - 16                   |

|  <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                 | 66 A                  | 20 - 4            | -                           |
| C                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 600 V                 | 66 A                  | 20 - 4            | -                           |

# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002643 |
|----------|----------|

### UNSPSC

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



# SPT 16/ 5-V-10,0-ZB BDL1-SERD - PCB terminal block



1707029

<https://www.phoenixcontact.com/us/products/1707029>

## 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% |
|-------------------------------------|----------------------------|

Phoenix Contact 2025 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)