

# ZFKDSA 10-10,00- 3 BKBDWH3-1SO - PCB terminal block



1744222

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Printed circuit board terminal, nominal current: 76 A, rated voltage (III/2): 400 V, nominal cross section: 10 mm<sup>2</sup>, number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: ZFKDS(A) 10, pitch: 10 mm, connection method: Spring-cage connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: black, Pin layout: Linear pinning, Solder pin [P]: 6.5 mm, number of solder pins per potential: 4, type of packaging: packed in cardboard

## Your advantages

- Defined contact force ensures that contact remains stable over the long term
- Clamping space opened by means of fixed screwdriver enables convenient conductor connection
- Separate bridge shaft for easily connecting multiple positions to jumpers
- Quick and convenient testing using integrated test option

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1744222       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 1 pc          |
| Product key                          | AANMBA        |
| GTIN                                 | 4046356332248 |
| Weight per piece (including packing) | 33.574 g      |
| Weight per piece (excluding packing) | 33 g          |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                           |                                  |
|---------------------------|----------------------------------|
| Product type              | Printed circuit board terminal   |
| Product family            | ZFKDS(A) 10                      |
| Product line              | COMBICON Terminals L             |
| Type                      | PC terminal block can be aligned |
| Number of positions       | 3                                |
| Pitch                     | 10 mm                            |
| Number of connections     | 3                                |
| Number of rows            | 1                                |
| Number of potentials      | 3                                |
| Pin layout                | Linear pinning                   |
| Solder pins per potential | 4                                |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 76 A  |
| Nominal voltage $U_N$       | 400 V |
| Rated voltage (III/3)       | 320 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)        | 800 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Connection data

#### Connection technology

|                       |                                  |
|-----------------------|----------------------------------|
| Type                  | PC terminal block can be aligned |
| Nominal cross section | 10 mm <sup>2</sup>               |

#### Conductor connection

|                                                                       |                                             |
|-----------------------------------------------------------------------|---------------------------------------------|
| Connection method                                                     | Spring-cage connection                      |
| Conductor cross-section rigid                                         | 0.2 mm <sup>2</sup> ... 16 mm <sup>2</sup>  |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 16 mm <sup>2</sup>  |
| Conductor cross-section AWG                                           | 24 ... 6                                    |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 10 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 10 mm <sup>2</sup> |
| Stripping length                                                      | 12 mm                                       |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
|---------------|----------------|

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

### Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| Color (Housing)                                                   | black (9005) |
| 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) | black (9005) |
|---------------------------|--------------|

## Dimensions

|                       |              |
|-----------------------|--------------|
| Dimensional drawing   |              |
| Pitch                 | 10 mm        |
| Width [w]             | 31.7 mm      |
| Height [h]            | 33.5 mm      |
| Length [l]            | 33.4 mm      |
| Installed height      | 27 mm        |
| Solder pin length [P] | 6.5 mm       |
| Pin dimensions        | 1.2 x 1.4 mm |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 15 mm  |
| Hole diameter | 2.2 mm |

## Mechanical tests

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## Connection test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:1991-10 |
| Result        | Test passed           |

## Test for conductor damage and slackening

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:1991-10 |
| Result        | Test passed           |

## Pull-out test

|                                                                             |                                         |
|-----------------------------------------------------------------------------|-----------------------------------------|
| Specification                                                               | IEC 60998-2-2:1991-10                   |
| 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 |
|                                                                             | 16 mm <sup>2</sup> / solid / > 100 N    |
|                                                                             | 10 mm <sup>2</sup> / flexible / > 90 N  |

## Electrical tests

### Temperature-rise test

|                                   |                                |
|-----------------------------------|--------------------------------|
| Specification                     | IEC 60998-2-1:1990-04          |
| Requirement temperature-rise test | Increase in temperature ≤ 45 K |

### Insulation resistance

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60998-2-2:1991-10 |
| Insulation resistance, neighboring positions | 10 <sup>9</sup> Ω     |

### Air clearances and creepage distances |

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| Specification                                          | IEC 60664-1:2007-04 |
| Insulating material group                              | I                   |
| Comparative tracking index (IEC 60112)                 | CTI 600             |
| Rated insulation voltage (III/3)                       | 320 V               |
| Rated surge voltage (III/3)                            | 4 kV                |
| minimum clearance value - non-homogenous field (III/3) | 3 mm                |
| minimum creepage distance (III/3)                      | 4 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)                        | 800 V               |
| Rated surge voltage (II/2)                             | 4 kV                |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm                |
| minimum creepage distance (II/2)                       | 4 mm                |

## Environmental and real-life conditions

### Vibration test

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

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|                        |                             |
|------------------------|-----------------------------|
| 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 60998-2-2:1991-10 |
| 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 ... 55 °C                                                               |

## Packaging specifications

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

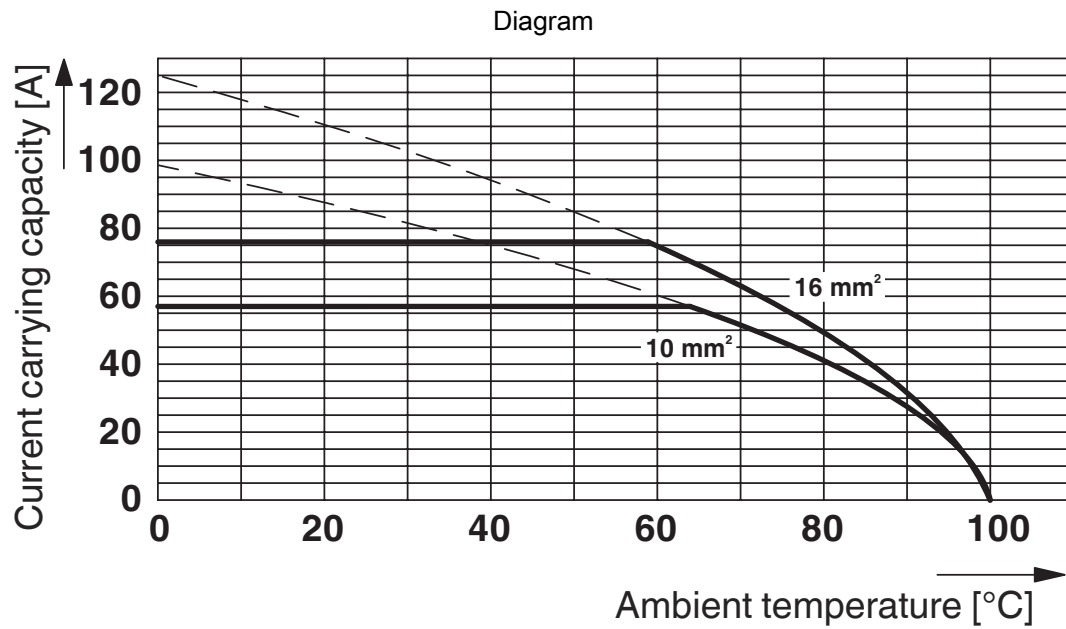
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## Drawings



Type: ZFKDS 10-10,00

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1744222>

|                                                                                                                                                                     |                                |                                |                   |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
| <div> <b>VDE report with production monitoring</b><br/>Approval ID: 40036082</div> |                                |                                |                   |                               |
|                                                                                                                                                                     | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                                                               |                                |                                |                   |                               |
|                                                                                                                                                                     | 320 V                          | 76 A                           | -                 | 0.2 - 16                      |

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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% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.593 kg CO2e |
|---------|---------------|

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