

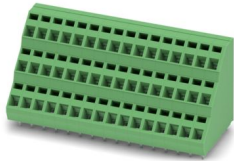
# ZFK3DSA 1,5-5,08-16 - PCB terminal block



1991684

<https://www.phoenixcontact.com/us/products/1991684>

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Printed circuit board terminal, nominal current: 12 A, rated voltage (III/2): 400 V, nominal cross section: 1.5 mm<sup>2</sup>, number of potentials: 48, number of rows: 3, number of positions per row: 16, product range: ZFK3DS(A) 1,5, pitch: 5.08 mm, connection method: Spring-cage connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.4 mm, number of solder pins per potential: 1, 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
- Conductor connection on several levels enables higher contact density
- The latching on the side enables various numbers of positions to be combined

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1991684       |
| Packing unit                         | 10 pc         |
| Minimum order quantity               | 10 pc         |
| Sales key                            | AA12          |
| Product key                          | AALMDA        |
| GTIN                                 | 4017918964856 |
| Weight per piece (including packing) | 78.92 g       |
| Weight per piece (excluding packing) | 73.438 g      |
| Customs tariff number                | 85369010      |
| Country of origin                    | IN            |

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## Technical data

### Product properties

|                           |                                  |
|---------------------------|----------------------------------|
| Product type              | Printed circuit board terminal   |
| Product family            | ZFK3DS(A) 1,5                    |
| Product line              | COMBICON Terminals S             |
| Type                      | PC terminal block can be aligned |
| Number of positions       | 16                               |
| Pitch                     | 5.08 mm                          |
| Number of connections     | 48                               |
| Number of rows            | 3                                |
| Number of potentials      | 48                               |
| Pin layout                | Linear pinning                   |
| Solder pins per potential | 1                                |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 12 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

|                       |                                  |
|-----------------------|----------------------------------|
| Type                  | PC terminal block can be aligned |
| Nominal cross section | 1.5 mm <sup>2</sup>              |

#### Conductor connection

|                                                                       |                                              |
|-----------------------------------------------------------------------|----------------------------------------------|
| Connection method                                                     | Spring-cage connection                       |
| Conductor cross-section rigid                                         | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section AWG                                           | 24 ... 14                                    |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Stripping length                                                      | 7.5 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)                                                              |

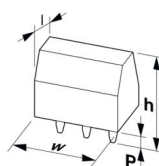
### Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| Color (Housing)                                                   | 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) | green (6021) |
|---------------------------|--------------|

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 5.08 mm                                                                              |
| Width [w]             | 82.28 mm                                                                             |
| Height [h]            | 40 mm                                                                                |
| Length [l]            | 32.2 mm                                                                              |
| Installed height      | 36.6 mm                                                                              |
| Solder pin length [P] | 3.4 mm                                                                               |
| Pin dimensions        | 0.7 x 1 mm                                                                           |

### PCB design

|               |         |
|---------------|---------|
| Pin spacing   | 25.4 mm |
| Hole diameter | 1.3 mm  |

## Electrical tests

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## 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)                       | 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

### 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 |
|-------------------|---------------------|

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1991684>

|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                    | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                    | 300 V                 | 10 A                  | 28 - 12           | -                           |
| D                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                    | 300 V                 | 10 A                  | 28 - 12           | -                           |

|  <b>cULus Recognized</b><br>Approval ID: E60425-19941111 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 250 V                 | 10 A                  | 26 - 12           | -                           |
| D                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 10 A                  | 26 - 12           | -                           |

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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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