

# ZFKDSA 4-7,5-16 - PCB terminal block



1760646  
<https://www.phoenixcontact.com/us/products/1760646>

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Printed circuit board terminal, nominal current: 32 A, rated voltage (III/2): 630 V, nominal cross section: 4 mm<sup>2</sup>, number of potentials: 16, number of rows: 1, number of positions per row: 16, product range: ZFKDS(A) 4, pitch: 7.5 mm, connection method: Spring-cage connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 4.6 mm, number of solder pins per potential: 2, 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                          | 1760646                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA14                           |
| Product key                          | AANMAA                         |
| GTIN                                 | 4046356353946                  |
| Weight per piece (including packing) | 69.714 g                       |
| Weight per piece (excluding packing) | 68.324 g                       |
| Customs tariff number                | 85369010                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                           |                                  |
|---------------------------|----------------------------------|
| Product type              | Printed circuit board terminal   |
| Product family            | ZFKDS(A) 4                       |
| Product line              | COMBICON Terminals L             |
| Type                      | PC terminal block can be aligned |
| Number of positions       | 16                               |
| Pitch                     | 7.5 mm                           |
| Number of connections     | 16                               |
| Number of rows            | 1                                |
| Number of potentials      | 16                               |
| Pin layout                | Linear pinning                   |
| Solder pins per potential | 2                                |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 32 A   |
| Nominal voltage $U_N$       | 630 V  |
| Rated voltage (III/3)       | 500 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

|                       |                                  |
|-----------------------|----------------------------------|
| Type                  | PC terminal block can be aligned |
| Nominal cross section | 4 mm <sup>2</sup>                |

#### Conductor connection

|                                                                       |                                            |
|-----------------------------------------------------------------------|--------------------------------------------|
| Connection method                                                     | Spring-cage connection                     |
| Conductor cross-section rigid                                         | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>  |
| Conductor cross-section AWG                                           | 24 ... 10                                  |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Stripping length                                                      | 10 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                  | 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                 | 7.5 mm                                                                               |
| Width [w]             | 129 mm                                                                               |
| Height [h]            | 27.6 mm                                                                              |
| Length [l]            | 29 mm                                                                                |
| Installed height      | 23 mm                                                                                |
| Solder pin length [P] | 4.6 mm                                                                               |
| Pin dimensions        | 1 x 1.4 mm                                                                           |

### PCB design

|               |         |
|---------------|---------|
| Pin spacing   | 12.5 mm |
| Hole diameter | 1.8 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 |
|                                                                             | 6 mm <sup>2</sup> / solid / > 80 N      |
|                                                                             | 4 mm <sup>2</sup> / flexible / > 60 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 |

|                                  |        |
|----------------------------------|--------|
| Insulating material group        | I      |
| Rated insulation voltage (III/3) | 500 V  |
| Rated surge voltage (III/3)      | 6 kV   |
| Rated insulation voltage (III/2) | 630 V  |
| Rated surge voltage (III/2)      | 6 kV   |
| Rated insulation voltage (II/2)  | 1000 V |
| Rated surge voltage (II/2)       | 6 kV   |

## 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) |
| 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 |
|---------------|-----------------------|

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|                  |        |
|------------------|--------|
| Temperature      | 850 °C |
| Time of exposure | 5 s    |

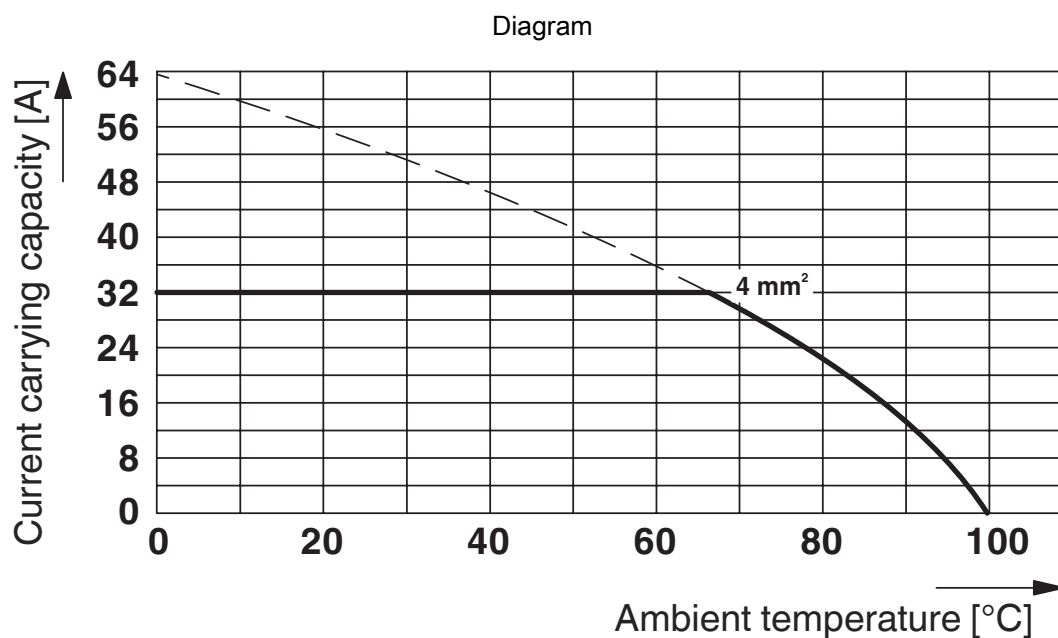
## Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| 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: ZFKDS 4-7,5 and ZFKDSA 4-9

Test following DIN EN 60512-5-2:2003-01

Reduction factor = 1

No. of positions: 5

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1760646>

|                                                                                                                                                       |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <div> <b>cULus Recognized</b><br/>Approval ID: E60425-19941111</div> |                       |                       |                   |                             |
|                                                                                                                                                       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                                     |                       |                       |                   |                             |
|                                                                                                                                                       | 300 V                 | 30 A                  | 24 - 10           | -                           |
| C                                                                                                                                                     |                       |                       |                   |                             |
|                                                                                                                                                       | 150 V                 | 30 A                  | 24 - 10           | -                           |
| D                                                                                                                                                     |                       |                       |                   |                             |
|                                                                                                                                                       | 300 V                 | 10 A                  | 24 - 10           | -                           |

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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                                 | 0.551 kg CO2e                            |

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