

# MKKDSN 1,5/ 4-5,08 TS - PCB terminal block



1708436

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PCB terminal block, nominal current: 13.5 A, rated voltage (III/2): 400 V, nominal cross section: 1.5 mm<sup>2</sup>, number of rows: 2, number of positions per row: 4, product range: MKKDSN 1,5, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, number of solder pins per potential: 1, type of packaging: packed in cardboard

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors
- Extremely small design for the respective conductor cross-section
- 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                          | 1708436                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Product key                          | AALFJL                         |
| GTIN                                 | 4055626000121                  |
| Weight per piece (including packing) | 9.153 g                        |
| Weight per piece (excluding packing) | 8.593 g                        |
| Country of origin                    | CN                             |

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## Technical data

### Product properties

|                           |                                  |
|---------------------------|----------------------------------|
| Product type              | PCB terminal block               |
| Product family            | MKKDSN 1,5                       |
| Product line              | COMBICON Terminals S             |
| Type                      | PC terminal block can be aligned |
| Number of positions       | 4                                |
| Pitch                     | 5.08 mm                          |
| Number of rows            | 2                                |
| Pin layout                | Linear pinning                   |
| Solder pins per potential | 1                                |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 13.5 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   | Screw connection with tension sleeve   |
| Conductor cross-section rigid   | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross-section flexible  | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross-section AWG   | 26 ... 16  |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve                   | 0.25 mm <sup>2</sup> ... 1 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>   |
| 2 conductors with same cross section, rigid   | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>  |
| 2 conductors with same cross section, flexible  | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>  |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve       | 0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>   |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup> (1st level: 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup> / 2nd level: 0.5 mm <sup>2</sup> ) |
| Stripping length  | 6 mm   |

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|                       |                   |
|-----------------------|-------------------|
| Drive form screw head | Slotted (L)       |
| Tightening torque     | 0.5 Nm ... 0.6 Nm |

## Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
| 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 (5 µm - 7 µm Sn)   |
| Metal surface terminal point (middle layer) | Nickel (2 µm - 3 µm Ni)  |
| Metal surface soldering area (top layer)    | Tin (5 µm - 7 µm Sn)   |
| Metal surface soldering area (middle layer) | Nickel (2 µm - 3 µm Ni)  |

### 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

|                       |            |
|-----------------------|------------|
| Pitch                 | 5.08 mm    |
| Width [w]             | 22.86 mm   |
| Height [h]            | 22.6 mm    |
| Length [l]            | 18.3 mm    |
| Installed height      | 19.1 mm    |
| Solder pin length [P] | 3.5 mm     |
| Pin dimensions        | 0.5 x 1 mm |

### PCB design

|               |        |
|---------------|--------|
| Pin spacing   | 10 mm  |
| Hole diameter | 1.3 mm |

## Mechanical tests

Test for conductor damage and slackening

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|               |                     |
|---------------|---------------------|
| 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 | 0.14 mm <sup>2</sup> / solid / > 10 N    |
|   | 0.14 mm <sup>2</sup> / flexible / > 10 N |
|   | 1.5 mm <sup>2</sup> / solid / > 40 N     |
|   | 1.5 mm <sup>2</sup> / flexible / > 40 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 60947-1:2007-06 + A1:2010-12 + A2:2014-09         |
| 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  |
| Note on connection cross section                       | With connected conductor 1.5 mm <sup>2</sup> (solid). |
| 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

### Vibration test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:2007-12 |
| Frequency     | 10 - 150 - 10 Hz      |

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|                        |                             |
|------------------------|-----------------------------|
| 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 (storage/transport) | -40 °C ... 70 °C  |
| Relative humidity (storage/transport)   | 30 % ... 70 %   |
| Ambient temperature (assembly)          | -5 °C ... 100 °C  |
| Ambient temperature (operation)         | -40 °C ... 105 °C (Depending on the current carrying capacity/derating curve) |

## Packaging specifications

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

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## Drawings

Diagram



Type: MKKDSN 1,5/...-5,08

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## Approvals

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|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                      |
|--|-----------------------|-----------------------|-------------------|----------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| B  | 150 V                 | 10 A                  | 28 - 14           | -                    |
| D  | 300 V                 | 10 A                  | 28 - 14           | -                    |

|  <b>cULus Recognized</b><br>Approval ID: E60425-19770427 |                       |                       |                   |                      |
|---|-----------------------|-----------------------|-------------------|----------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| B   |                       |                       |                   |                      |
| Screw connection  | 300 V                 | 10 A                  | 30 - 14           | -                    |
| 2 conductors with the same cross-section  | 300 V                 | 10 A                  | - 18              | -                    |
| D   |                       |                       |                   |                      |
| Screw connection  | 300 V                 | 10 A                  | 30 - 14           | -                    |
| 2 conductors with the same cross-section  | 300 V                 | 10 A                  | - 18              | -                    |

|  <b>VDE approval of drawings</b><br>Approval ID: 40055535 |                       |                       |                   |                      |
|--|-----------------------|-----------------------|-------------------|----------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| keine  | 400 V                 | 17.5 A                | -                 | 0.2 - 1.5            |

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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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