

# PCB terminal block - MKDS 1,5/15 - 1742059

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PCB terminal block, nominal current: 17.5 A, rated voltage (III/2): 400 V, nominal cross section: 1.5 mm<sup>2</sup>, pitch: 5 mm, number of positions: 15, connection method: Screw connection with tension sleeve, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm. The article can be aligned to create different nos. of positions!




The figure shows a 10-position version of the product

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors
- The latching on the side enables various numbers of positions to be combined



## Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 50 pc   |
| GTIN         | <br>4 046356 294966 |
| GTIN         | 4046356294966   |

## Technical data

### Item properties

|                           |                                      |
|---------------------------|--------------------------------------|
| Brief article description | PCB terminal block                   |
| Range of articles         | MKDS 1,5                             |
| Pitch                     | 5 mm                                 |
| Number of positions       | 15                                   |
| Connection method         | Screw connection with tension sleeve |
| Drive form screw head     | Slotted (L)                          |
| Screw thread              | M3                                   |
| Mounting type             | Wave soldering                       |
| Pin layout                | Linear pinning                       |
| Number of levels          | 1                                    |
| Number of connections     | 15                                   |

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## Technical data

### Item properties

|                      |    |
|----------------------|----|
| Number of potentials | 15 |
|----------------------|----|

### Electrical parameters

|                             |        |
|-----------------------------|--------|
| Nominal current             | 17.5 A |
| Nom. voltage                | 400 V  |
| Rated voltage               | 250 V  |
| Rated voltage (III/2)       | 400 V  |
| Rated voltage (II/2)        | 630 V  |
| Rated surge voltage (III/3) | 4 kV   |
| Rated surge voltage (III/2) | 4 kV   |
| Rated surge voltage (II/2)  | 4 kV   |

### Connection capacity

|   |   |
|---|---|
| Connection method   | Screw connection with tension sleeve          |
| pluggable   | Yes   |
| Conductor cross section solid   | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| Conductor cross section flexible  | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross section AWG / kcmil   | 26 ... 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>  |
| 2 conductors with same cross section, solid   | 0.14 mm <sup>2</sup> ... 1 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>     |
| Stripping length  | 7 mm  |
| Torque  | 0.5 Nm ... 0.6 Nm                             |

### 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 (4 - 8 µm Sn)   |
| Metal surface soldering area (top layer) | Tin (4 - 8 µm Sn)   |

### Material data - housing

|  |              |
|--|--------------|
| Housing color  | 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          |

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## Technical data

### Material data - housing

|   |        |
|---|--------|
| 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 for the product

|                             |   |
|-----------------------------|---|
| Caption                     | Schematic representation – for additional information, see product range drawing in the Download Center |
| Length [ l ]                | 9.8 mm  |
| Width [ w ]                 | 75 mm   |
| Height [ h ]                | 17.3 mm   |
| Pitch                       | 5 mm  |
| Height (without solder pin) | 13.8 mm   |
| Solder pin [P]              | 3.5 mm  |
| Pin spacing                 | 5 mm  |
| Pin dimensions              | 0.9 x 0.9 mm  |

### Dimensions for PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.3 mm |
| Pin spacing   | 5 mm   |

### Packaging information

|                            |                     |
|----------------------------|---------------------|
| Type of packaging          | packed in cardboard |
| Pieces per package         | 50                  |
| Denomination packing units | Pcs.                |

### General product information

|              |  |
|--------------|--|
| Type of note | Note on application  |
| Note         | For safe conductor connection, always adhere to a defined tightening torque. Particularly in the case of PCB terminal blocks with two or three positions, the individual solder pin for each contact point cannot compensate for this. That is why the terminal blocks must be supported during conductor connection (held with one hand, support on the housing). |

### Ambient conditions

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

### Termination and connection method

|  |                       |
|--|-----------------------|
| Test for conductor damage and slackening | IEC 60998-2-1:1990-04 |
|  | Test passed           |

### Pull-out test

|  |                                       |
|--|---------------------------------------|
| Pull-out test  | IEC 60998-2-1:1990-04                 |
|  | Test passed                           |
| Conductor cross section / conductor type / tensile force | 0.14 mm <sup>2</sup> / solid / > 10 N |

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## Technical data

### Pull-out test

|  |  |
|--|--|
|  | 0.14 mm <sup>2</sup> / flexible / > 10 N |
|  | 2.5 mm <sup>2</sup> / solid / > 50 N     |
|  | 1.5 mm <sup>2</sup> / flexible / > 40 N  |

### Mechanical tests according to standard

|                    |                          |
|--------------------|--------------------------|
| Test specification | IEC 60998-2-1 (in parts) |
|--------------------|--------------------------|

### Electrical tests

|                             |                     |
|-----------------------------|---------------------|
| Rated current               | 17.5 A              |
| Conductor cross section     | 1.5 mm <sup>2</sup> |
| Rated voltage (III/2)       | 400 V               |
| Rated surge voltage (III/2) | 4 kV                |

### Air clearances and creepage distances

|   |   |
|---|---|
| Clearances and creepage distances               | IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09         |
| Specification                                   | IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09         |
| Minimum clearance - inhomogeneous field (III/3) | 3 mm  |
| Minimum clearance - inhomogeneous field (III/2) | 3 mm  |
| Minimum clearance - inhomogeneous field (II/2)  | 3 mm  |
| Minimum creepage distance value (III/3)         | 3.2 mm  |
| Minimum creepage distance value (III/2)         | 3 mm  |
| Minimum creepage distance value (II/2)          | 3.2 mm  |
| Note on connection cross section                | With connected conductor 2.5 mm <sup>2</sup> (solid). |

### Temperature-rise test

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

### Current carrying capacity / derating curves

|                     |  |
|---------------------|--|
| Caption             | Type: MKDS 1,5/2 and MKDS 1,5/3<br>Test as per DIN EN 60512-5-2:2003-01<br>Reduction factor = 1<br>No. of positions: 5 |
| Specification       | Following IEC 60512-5-2:2002-02  |
| Number of positions | 5  |
| Reduction factor    | 1  |

### Vibration test

|               |                        |
|---------------|------------------------|
| Specification | IEC 60068-2-6:1995-03  |
| Result        | Test passed            |
| Frequency     | 10 - 150 - 10 Hz       |
| Sweep speed   | 1 octave/min           |
| Amplitude     | 0.35 mm (10 - 60.1 Hz) |
| Acceleration  | 5 g (60.1 - 150 Hz)    |

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## Technical data

### Vibration test

|                        |       |
|------------------------|-------|
| Test duration per axis | 2.5 h |
|------------------------|-------|

### Resistance to ageing, humidity and penetration of solids

|            |                 |
|------------|-----------------|
| Dry heat   | 168 h/100°C     |
| Humid heat | 48 h/30 °C/92 % |

### Insulation resistance

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60998-2-1:1990-04 |
| Result                                       | Test passed           |
| Insulation resistance, neighboring positions | 10 <sup>9</sup> Ω     |

### Glow-wire test

|                  |                       |
|------------------|-----------------------|
| Specification    | IEC 60998-2-1:1990-04 |
| Result           | Test passed           |
| Temperature      | 850 °C                |
| Time of exposure | 5 s                   |

### Mechanical strength/tumbling barrel test

|                       |                       |
|-----------------------|-----------------------|
| Specification         | IEC 60998-2-1:1990-04 |
| Height of fall        | 50 cm                 |
| Number of drop cycles | 50                    |

### Standards and Regulations

|  |        |
|--|--------|
| Connection in acc. with standard       | EN-VDE |
|  | CSA    |
| Flammability rating according to UL 94 | V0     |

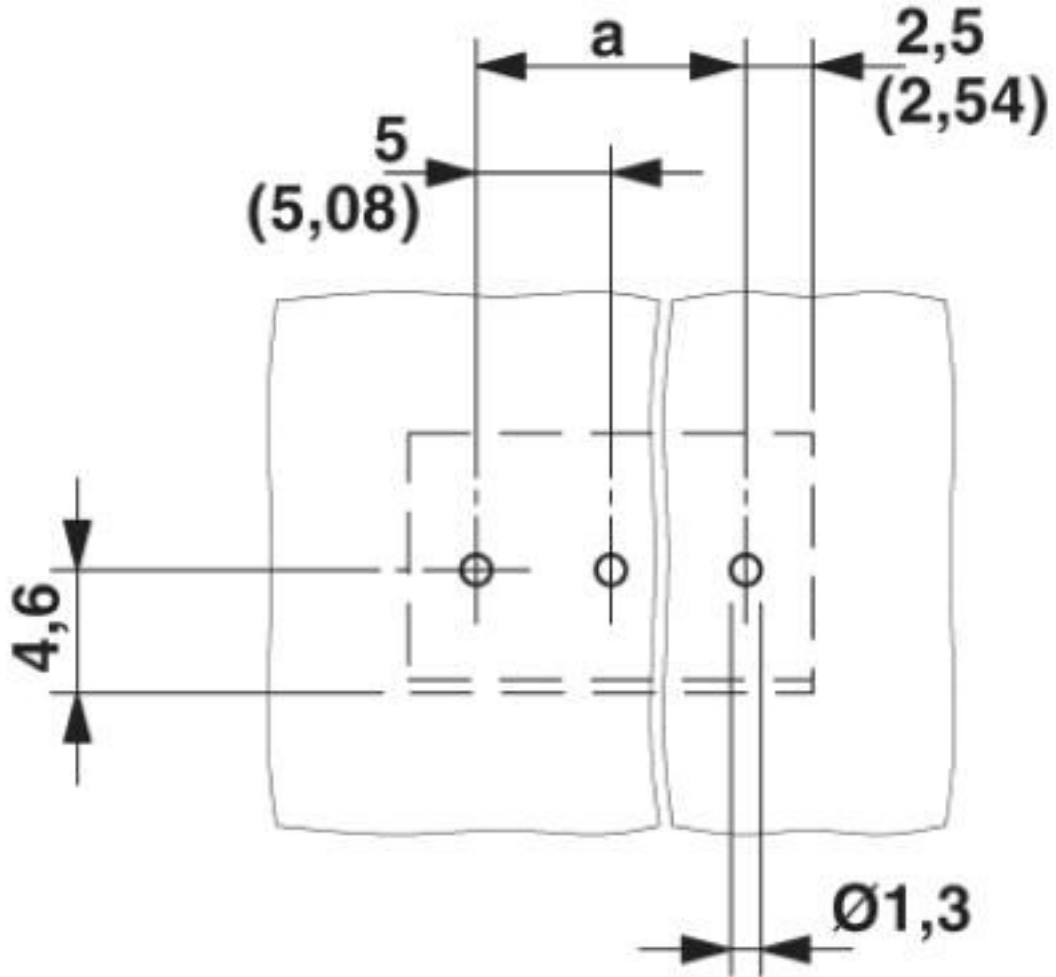
### Environmental Product Compliance

|            |   |
|------------|---|
| REACH SVHC | Lead 7439-92-1  |
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

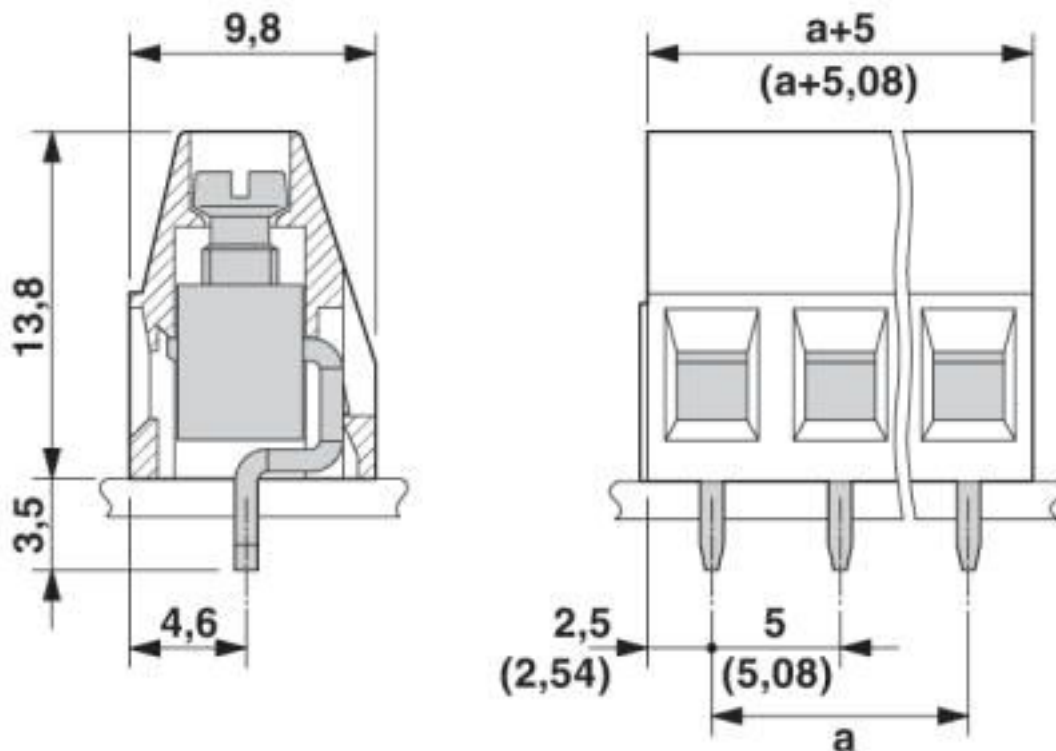
# PCB terminal block - MKDS 1,5/15 - 1742059

Drilling diagram



# PCB terminal block - MKDS 1,5/15 - 1742059

Dimensional drawing



## Classifications

### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440401 |
| eCl@ss 4.0    | 27141100 |
| eCl@ss 4.1    | 27141100 |
| eCl@ss 5.0    | 27141100 |
| eCl@ss 5.1    | 27261100 |
| eCl@ss 6.0    | 27261100 |
| eCl@ss 7.0    | 27440401 |
| eCl@ss 8.0    | 27440401 |
| eCl@ss 9.0    | 27440401 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001121 |
| ETIM 4.0 | EC002643 |
| ETIM 5.0 | EC002643 |
| ETIM 6.0 | EC002643 |
| ETIM 7.0 | EC002643 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 6.01 | 30211801 |
|-------------|----------|

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## Classifications

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 7.0901 | 39121432 |
| UNSPSC 11     | 39121432 |
| UNSPSC 12.01  | 39121432 |
| UNSPSC 13.2   | 39121432 |
| UNSPSC 18.0   | 39121432 |
| UNSPSC 19.0   | 39121432 |
| UNSPSC 20.0   | 39121432 |
| UNSPSC 21.0   | 39121432 |

## Approvals

### Approvals


#### Approvals


DNV GL / CSA / IECCEB Scheme / SEV / EAC / cULus Recognized

#### Ex Approvals

### Approval details

|        |   |   |            |
|--------|---|---|------------|
| DNV GL |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAE00001EV |
|--------|---|---|------------|

|                            |   |   |       |
|----------------------------|---|---|-------|
| CSA                        |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 13631 |
|                            | B   | D   |       |
| Nominal voltage UN         | 300 V   | 300 V   |       |
| Nominal current IN         | 10 A  | 10 A  |       |
| mm <sup>2</sup> /AWG/kcmil | 28-14   | 28-14   |       |

|                            |   |   |          |
|----------------------------|---|---|----------|
| IECEE CB Scheme            |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a> | CH-10787 |
| Nominal voltage UN         | 250 V   |   |          |
| Nominal current IN         | 24 A  |   |          |
| mm <sup>2</sup> /AWG/kcmil | 2.5   |   |          |



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## Approvals

|                            |  |   |         |
|----------------------------|--|---|---------|
| SEV                        |  | <a href="https://www.eurofins.ch/de/">https://www.eurofins.ch/de/</a> | IK-4497 |
| Nominal voltage UN         |  | 250 V   |         |
| Nominal current IN         |  | 24 A  |         |
| mm <sup>2</sup> /AWG/kcmil |  | 2.5   |         |

|     |  |         |
|-----|--|---------|
| EAC |  | B.01687 |
|-----|--|---------|

|                            |       |   |                 |
|----------------------------|-------|---|-----------------|
| cULus Recognized           |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | E60425-19770427 |
|                            | B     | D   |                 |
| Nominal voltage UN         | 300 V | 300 V   |                 |
| Nominal current IN         | 15 A  | 10 A  |                 |
| mm <sup>2</sup> /AWG/kcmil | 30-14 | 30-14   |                 |

## Accessories

### Accessories

#### Labeled terminal marker

Marker card - SK 5/3,8:FORTL.ZAHLEN - 0804183



Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm

#### Pitch spacer

Pitch spacer - RZ 1,25-MKDS 1,5 - 1702048



Pitch spacer, for adjusting the pitches between MKDS and GMKDS terminal blocks in mixed rows, 1.25 mm thick

#### Screwdriver tools

## PCB terminal block - MKDS 1,5/15 - 1742059

### Accessories

Screwdriver - SZS 0,6X3,5 - 1205053



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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