

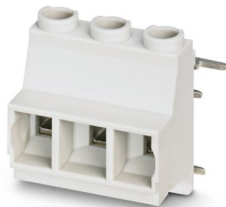
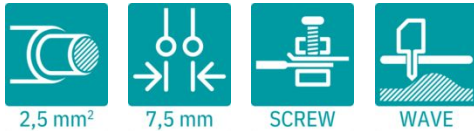
# MKDSO 2,5 HV/ 3R-7,5 KMGY - PCB terminal block



2890959

<https://www.phoenixcontact.com/us/products/2890959>

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PCB terminal block, nominal current: 24 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of rows: 1, number of positions per row: 3, product range: MKDSO 2,5 HV/..-R, pitch: 7.5 mm, connection method: Screw connection with tension sleeve, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: light gray, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, number of solder pins per potential: 1. Product with pin output on right side

## Your advantages

- Maintenance-free and vibration-resistant, thanks to the Reakdyn principle or spring-loaded elements
- PCB terminal block is orthogonal to the PCB
- Internationally recognized and proven screw connection

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2890959       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AC08          |
| Product key                          | ACHADA        |
| GTIN                                 | 4046356101578 |
| Weight per piece (including packing) | 8.198 g       |
| Weight per piece (excluding packing) | 8 g           |
| Customs tariff number                | 85369010      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                           |                    |
|---------------------------|--------------------|
| Product type              | PCB terminal block |
| Product family            | MKDSO 2,5 HV/...-R |
| Number of positions       | 3                  |
| Pitch                     | 7.5 mm             |
| Number of rows            | 1                  |
| Pin layout                | Linear pinning     |
| Solder pins per potential | 1                  |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 24 A   |
| Nominal voltage $U_N$       | 600 V  |
| Rated voltage (III/3)       | 630 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

|                       |                     |
|-----------------------|---------------------|
| Nominal cross section | 2.5 mm <sup>2</sup> |
|-----------------------|---------------------|

#### Conductor connection

|   |   |
|---|---|
| Connection method   | Screw connection with tension sleeve          |
| 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> ... 2.5 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> ... 2.5 mm <sup>2</sup>  |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve                      | 0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| 2 conductors with same cross section, rigid   | 0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>  |
| 2 conductors with same cross section, flexible  | 0.25 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> ... 0.75 mm <sup>2</sup> |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Stripping length  | 8 mm  |
| Tightening torque   | 0.5 Nm ... 0.6 Nm                             |

### Mounting

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|               |                |
|---------------|----------------|
| 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 (4 $\mu\text{m}$ - 8 $\mu\text{m}$ Sn)                                       |
| Metal surface soldering area (top layer) | Tin (4 $\mu\text{m}$ - 8 $\mu\text{m}$ Sn)                                       |

### Material data - housing

|   |        |
|---|--------|
| 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 |

## Notes

|                     |   |
|---------------------|---|
| Note on application | For reliable conductor connection, always adhere to a defined tightening torque.<br>During conductor connection (mounting), the terminal blocks must be supported (held with one hand, support on the housing). |
|---------------------|---|

## Dimensions

|                       |            |
|-----------------------|------------|
| Dimensional drawing   |            |
| Pitch                 | 7.5 mm     |
| Width [w]             | 23.25 mm   |
| Height [h]            | 20.8 mm    |
| Length [l]            | 27.95 mm   |
| Solder pin length [P] | 3.5 mm     |
| Pin dimensions        | 0.8 x 1 mm |

### PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.4 mm |
|---------------|--------|

## Mechanical tests

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## Test for conductor damage and slackening

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-1:2002-12 |
| Result        | Test passed           |

## Pull-out test

|   |   |
|---|---|
| Specification   | IEC 60998-2-1:2002-12                   |
| 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 |
|   | 2.5 mm <sup>2</sup> / solid / > 50 N    |
|   | 2.5 mm <sup>2</sup> / flexible / > 50 N |

## Torque test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-1:2002-12 |
|---------------|-----------------------|

## Electrical tests

### Temperature-rise test

|                                   |                                |
|-----------------------------------|--------------------------------|
| Specification                     | IEC 60998-1:2002-12            |
| Requirement temperature-rise test | Increase in temperature ≤ 45 K |

### Insulation resistance

|  |                     |
|--|---------------------|
| Specification                                | IEC 60998-1:2002-12 |
| Insulation resistance, neighboring positions | 10 <sup>9</sup> Ω   |

### Air clearances and creepage distances |

|  |   |
|--|---|
| Specification  | IEC 60664-1:1992-10 + A1:2000-02 + A2:2002-05 |
| Insulating material group                              | I   |
| Comparative tracking index (IEC 60112)                 | CTI 600                                       |
| Rated insulation voltage (III/3)                       | 630 V   |
| Rated surge voltage (III/3)                            | 6 kV  |
| minimum clearance value - non-homogenous field (III/3) | 5.5 mm  |
| minimum creepage distance (III/3)                      | 8 mm  |
| Rated insulation voltage (III/2)                       | 630 V   |
| Rated surge voltage (III/2)                            | 6 kV  |
| minimum clearance value - non-homogenous field (III/2) | 5.5 mm  |
| minimum creepage distance (III/2)                      | 5.5 mm  |
| Rated insulation voltage (II/2)                        | 1000 V  |
| Rated surge voltage (II/2)                             | 6 kV  |
| minimum clearance value - non-homogenous field (II/2)  | 5.5 mm  |
| minimum creepage distance (II/2)                       | 5.5 mm  |

## Environmental and real-life conditions

### Vibration test

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

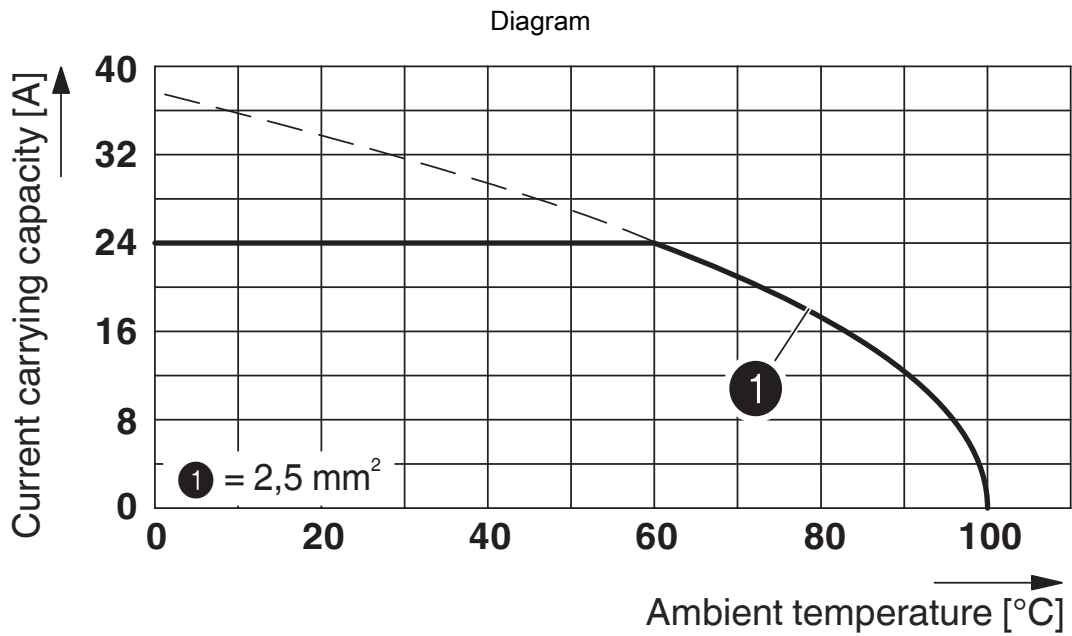
## Glow-wire test

|                  |                     |
|------------------|---------------------|
| Specification    | IEC 60998-1:2002-12 |
| Temperature      | 850 °C              |
| Time of exposure | 5 s                 |

## Ambient conditions

|   |   |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 55 °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) |

## Drawings



Type: MKDSO 2,5 HV/3L-7,5 KMGY

Tested in accordance with DIN EN 60512-5-2: 2003-01

Reduction factor: 1

No. of positions: 3

# MKDSO 2,5 HV/ 3R-7,5 KMGY - PCB terminal block





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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2890959>

|  <b>cULus Recognized</b><br>Approval ID: E60425-19770427 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   | 300 V                 | 20 A                  | 30 - 12           | -                           |
| C   | 300 V                 | 20 A                  | 30 - 12           | -                           |
| D   | 600 V                 | 5 A                   | 30 - 12           | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40023968 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine   | 750 V                 | 24 A                  | -                 | 0.2 - 2.5                   |

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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-50   |
|  | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.034 kg CO2e |
|---------|---------------|

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