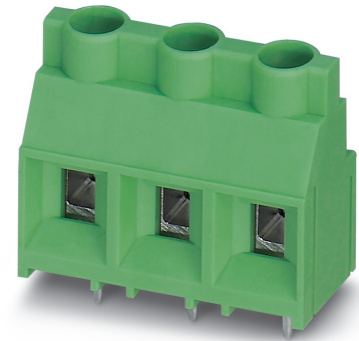


# Data sheet

Order No.: 1714984

Type: MKDS 5/ 3-9,5

PCB terminal block, Screw connection with tension sleeve



## 1 Main features



- |                           |                                      |                        |                     |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos.             | 3                                    | • Nominal current      | 32 A                |
| • Conductor cross section | 4 mm <sup>2</sup>                    | • Nominal voltage      | 1000 V              |
| • Color                   | green (6021)                         | • Connection direction | 0°                  |
| • Pitch                   | 9.52 mm                              | • Type of packaging    | packed in cardboard |
| • Connection method       | Screw connection with tension sleeve |                        |                     |

## 2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors



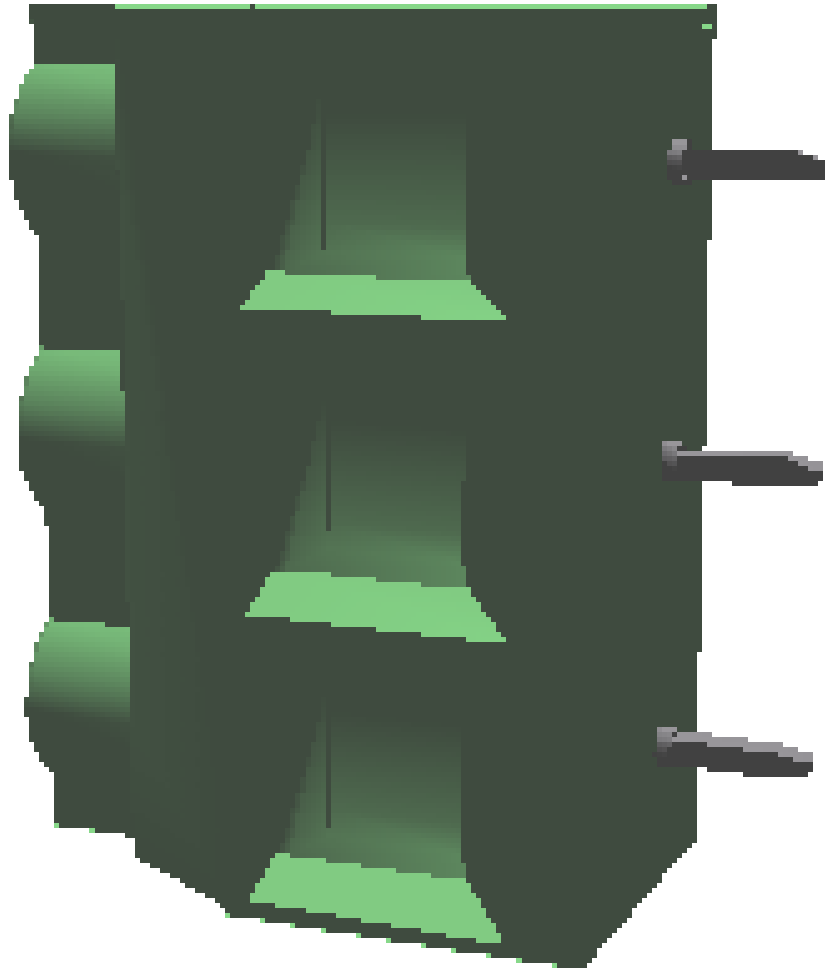
Make sure you always use the latest documentation.

It can be downloaded at: [phoenixcontact.net/product/1714984](https://phoenixcontact.net/product/1714984)

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4 3D model in PDF can be activated (Acrobat Reader only)



**1714984 MKDS 5/ 3-9,5****5 General Technical Data****5.1 item properties**

|  |   |
|--|---|
| Item no.   | 1714984   |
| Type   | MKDS 5/ 3-9,5   |
| Product type                                     | PCB terminal block  |
| Range of articles                                | MKDS 5  |
| Pitch  | 9.52 mm   |
| Number of positions                              | 3   |
| Number of rows                                   | 1   |
| Number of connections                            | 3   |
| Number of potentials                             | 3   |
| Connection method                                | Screw connection with tension sleeve                              |
| Screw thread                                     | M3  |
| Drive form screw head                            | Slotted   |
| Mounting type                                    | Wave soldering  |
| Connection direction of the conductor to the PCB | 0 °   |
| Pin layout                                       | Linear pinning  |
| Solder pins per potential                        | 1   |
| Product note                                     | The article can be aligned to create different nos. of positions! |
| Type   | PC terminal block can be aligned                                  |

**1714984 MKDS 5/ 3-9,5****6 Conductor connection****6.1 Connection capacity**

|  |   |
|--|---|
| 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 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>    |
| 2 conductors with same cross section, solid  | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| 2 conductors with same cross section, stranded   | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| 2 conductors with same cross section, stranded, 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 and plastic sleeve | 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>   |
| Stripping length   | 8 mm  |
| Tightening torque  | 0.5 Nm ... 0.6 Nm                             |

**6.2 Connection capacity AWG**

|                             |           |
|-----------------------------|-----------|
| Conductor cross section AWG | 24 ... 10 |
|-----------------------------|-----------|

**7 Material properties****7.1 Material of metal parts**

|                         |   |
|-------------------------|---|
| Note                    | WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material        | Cu alloy  |
| Terminal point surface  | Tin (4 - 8 μm Sn)   |
| Soldering area surface  | Tin (4 - 8 μm Sn)   |
| Surface characteristics | Tin-plated  |

**7.2 Material of plastic parts**

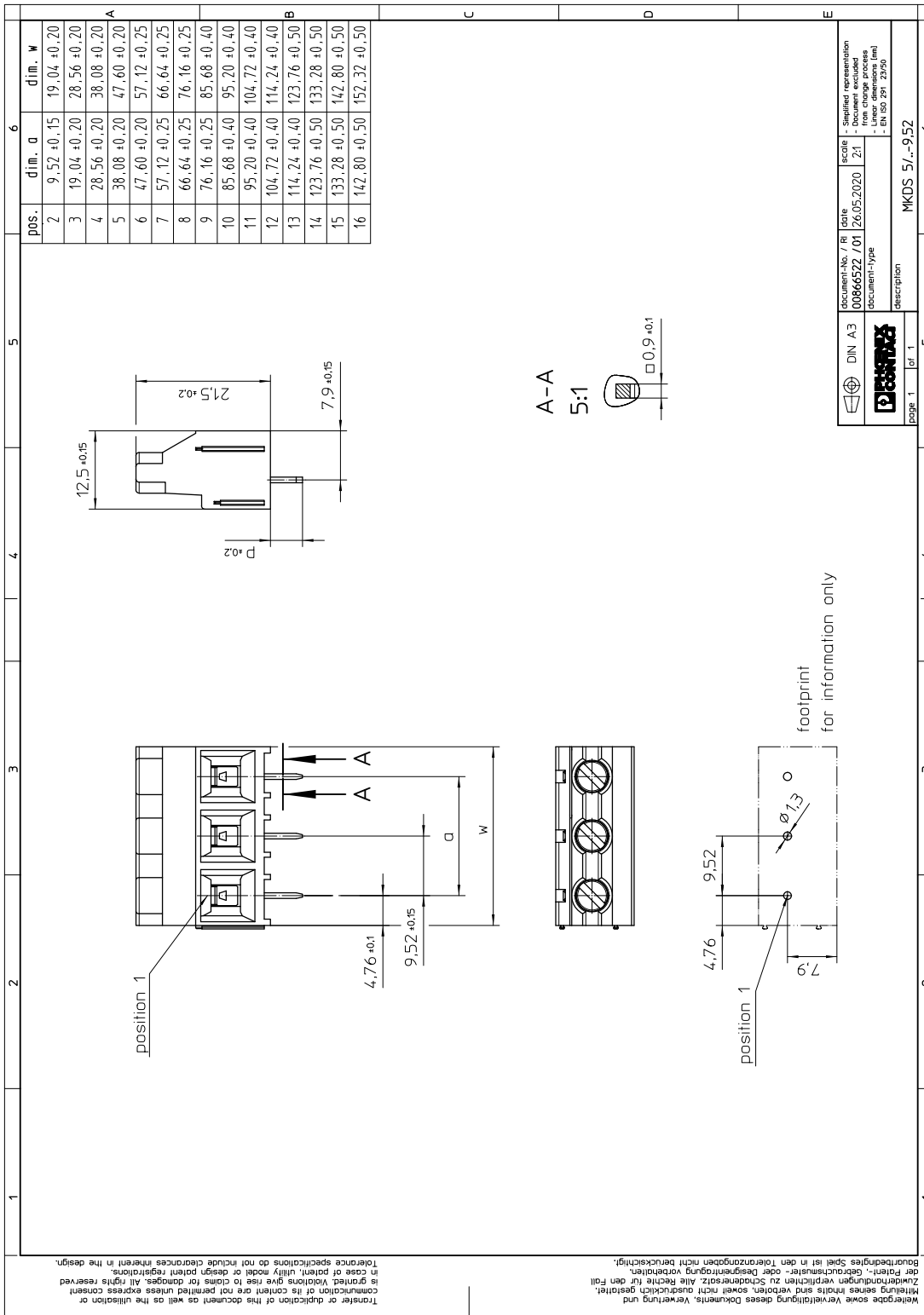
|   |                |
|---|----------------|
|   | <b>Housing</b> |
| Color   | green (6021)   |
| Insulating material   | PA             |
| Insulating material group   | I              |
| CTI according to IEC 60112  | 600            |
| Flammability rating according to UL 94                            | V0             |
| Glow wire flammability index GWFI according to EN 60695-2-12      | 850            |
| 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         |

**1714984 MKDS 5/ 3-9,5****8 Dimensions****8.1 Dimensions for the product**

|                             |          |
|-----------------------------|----------|
| Length                      | 12.5 mm  |
| Width                       | 28.56 mm |
| Height (without solder pin) | 21.5 mm  |
| Total height                | 26.5 mm  |
| Solder pin [P]              | 5 mm     |

1714984 MKDS 5/ 3-9,5

9 Series drawing



**1714984 MKDS 5/ 3-9,5****10 Product notes****10.1 General information**

Note on application

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).

**10.2 Dimensions for PCB design**

|                |              |
|----------------|--------------|
| Hole diameter  | 1.3 mm       |
| Pin dimensions | 0.9 x 0.9 mm |

**11 Application****12 Packaging information**

|                    |                     |
|--------------------|---------------------|
| Type of packaging  | packed in cardboard |
| Pieces per package | 50                  |

**12.1 Temperature limit values**

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



**1714984 MKDS 5/ 3-9,5****13 Mechanical tests****13.1 Pull-out test**

|  |   |
|--|---|
| Specification  | IEC 60999-1:1999-11                     |
| Result   | Test passed                             |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm <sup>2</sup> / solid / > 10 N    |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm <sup>2</sup> / flexible / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 6 mm <sup>2</sup> / solid / > 80 N      |
| Conductor cross section/conductor type/tractive force actual value | 4 mm <sup>2</sup> / flexible / > 60 N   |

**13.2 Check for damage to conductor or loosening**

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

**1714984 MKDS 5/ 3-9,5****14 Electrical tests**

|   |                          |
|---|--------------------------|
| Rated current / conductor cross section | 32 A / 4 mm <sup>2</sup> |
| Rated insulation voltage (III/2)        | 1000 V                   |
| Rated surge voltage (III/2)             | 8 kV                     |
| Contact resistance                      | 0.36 mΩ                  |
| Degree of pollution                     | 2                        |

**14.1 Air and creepage distances**

|   |                     |        |        |
|---|---------------------|--------|--------|
| Component   | PCB terminal block  |        |        |
| Specification   | IEC 60664-1:2007-04 |        |        |
| Mains type  | unearthed mains     |        |        |
| Insulating material group   | I                   |        |        |
| Comparative tracking index (IEC 60112:2003-01)                    | CTI 600             |        |        |
| Rated insulation voltage  | 690 V               | 1000 V | 1000 V |
| Rated surge voltage   | 8 kV                | 8 kV   | 6 kV   |
| Degree of pollution   | 3                   | 2      | 2      |
| Overvoltage category  | III                 | III    | II     |
| Minimum clearance case A (inhomogeneous field)                    | 8 mm                | 8 mm   | 5.5 mm |
| Minimum value of the creepage path requirement in acc. with table | 8 mm                | 8 mm   | 5.5 mm |

**14.2 Short-time withstand current test**

|  |                          |
|--|--------------------------|
| Specification                              | IEC 60947-7-4:2019-01    |
| Result                                     | Test passed              |
| Conductor cross section/short-time current | 6 mm <sup>2</sup> / 97 A |

**14.3 Aging test (climatic impact and corrosion testing)**

|  |                             |
|--|-----------------------------|
| Specification  | IEC 60947-7-4:2019-01       |
| Result   | Test passed                 |
| Contact resistance R <sub>1</sub>                                    | 0.36 mΩ / 6 mm <sup>2</sup> |
| Test sequence 1: low temperature storage                             | -40 °C / 2 h                |
| Test sequence 2: heat storage  | 168 h/105 °C                |
| Test sequence 3: noxious gas storage (ISO 6988)                      | KFW 0.2 S/1 cycle           |
| Contact resistance R <sub>2</sub>                                    | 0.31 mΩ / 6 mm <sup>2</sup> |
| Rated impulse voltage at sea level<br>Voltage waveform ≥ (1.2/50 μs) | 7.3 kV                      |
| Power-frequency withstand voltage<br>Voltage waveform ≥ (50/60 Hz)   | 4.2 kV                      |

**14.4 Insulation resistance**

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Result                                       | Test passed           |
| Insulation resistance, neighboring positions | > 5 MΩ                |

**1714984 MKDS 5/ 3-9,5****14.5 Mechanical connection test for the PCB terminal block**

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2019-01 |
| Result        | Test passed           |

**14.6 Temperature rise test**

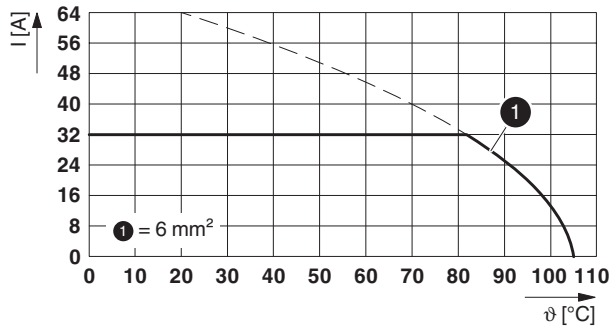
|   |  |
|---|--|
| Specification   | IEC 60947-7-4:2019-01  |
| Result  | Test passed  |
| Requirement temperature-rise test                     | The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature. |
| Conductor cross section/test current/temperature rise | 6 mm <sup>2</sup> / 32 A / 23.1 K  |

## 1714984 MKDS 5/ 3-9,5

## 15 Current carrying capacity/derating curves

|                         |   |
|-------------------------|---|
| Specification           | IEC 60947-7-4:2019-01                         |
| Note                    | Representation based on IEC 60512-5-2:2002-02 |
| Reduction factor        | 1   |
| Number of positions     | 4   |
| Conductor cross section | 4 mm <sup>2</sup>                             |

Type: MKDS 5/...-9,5



**1714984 MKDS 5/ 3-9,5****16 Environmental and durability tests****16.1 Vibration test**








|                        |                        |
|------------------------|------------------------|
| Specification          | IEC 60068-2-6:2007-12  |
| Result                 | Test passed            |
| Frequency              | 10 - 150 - 10 Hz       |
| Sweep speed            | 1 octave/min           |
| Amplitude              | 0.35 mm (10 - 60.1 Hz) |
| Acceleration           | 5g (60.1 - 150 Hz)     |
| Test duration per axis | 2.5 h                  |
| Test directions        | X-, Y- and Z-axis      |
| Note                   |                        |

**16.2 Assessment of fire risk (glow wire test)**

|                  |                        |  |  |
|------------------|------------------------|--|--|
| Specification    | IEC 60695-2-10:2013-04 |  |  |
| Result           | Test passed            |  |  |
| Temperature      | 850 °C                 |  |  |
| Time of exposure | 5 s                    |  |  |

## 1714984 MKDS 5/ 3-9,5

## 17 Approvals / Certificates

| CSA                | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
|---|-------------|-------------|---------------------|----------------------------------|
| <b>Usegroup B</b>   |             |             |                     |                                  |
|   | 300 V       | 30 A        | 28 - 10             | -                                |
| <b>Usegroup C</b>   |             |             |                     |                                  |
|   | 300 V       | 30 A        | 28 - 10             | -                                |
| EAC                |             |             |                     |                                  |
| cULus Recognized   | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
| <b>Usegroup B</b>   |             |             |                     |                                  |
|   | 300 V       | 30 A        | 30 - 10             | -                                |
| <b>Usegroup C</b>   |             |             |                     |                                  |
|   | 300 V       | 30 A        | 30 - 10             | -                                |
| <b>Usegroup D</b>   |             |             |                     |                                  |
|   | 600 V       | 5 A         | 30 - 10             | -                                |
| DNV GL             |             |             |                     |                                  |
| RS                 |             |             |                     |                                  |
| SEV              | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
|   | 690 V       | 32 A        | -                   | 6                                |
| IECEE CB Scheme  | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
|   | 690 V       | 32 A        | -                   | 6                                |

**1714984 MKDS 5/ 3-9,5****18 Commercial Data**

|                    |  |
|--------------------|--|
| Item no.           | 1714984  |
| Type               | MKDS 5/ 3-9,5  |
| Pieces per package | 50   |
| Net weight         | 8.762 g  |
| GTIN               | 4017918024123  |
|                    | Information that applies locally, see link on page 1 |

**19 Accessories**

| Description  | Order No. | Type                    |
|--|-----------|-------------------------|
| 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 | 1205053   | SZS 0,6X3,5             |
|  | 0804633   | SK 9,5/3,8:FORTL.ZAHLEN |
|  | 0805920   | SK 9,5/3,8:UNBEDRUCKT   |