

Data sheet

Order No.: 1711039

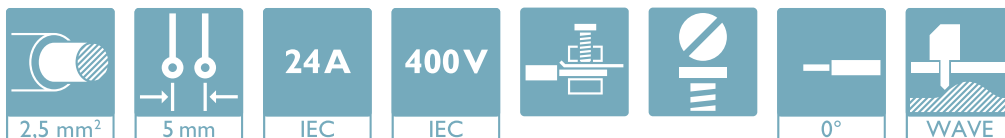
Type: MKDS 3/ 3

PCB terminal block, Screw connection with tension sleeve



The figure shows a 2-position version

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 3 | • Nominal current | 24 A |
| • Conductor cross section | 2.5 mm ² | • Nominal voltage | 400 V |
| • Color | green | • Connection direction | 0° |
| • Pitch | 5 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
- ✓ Integrated protective guide prevents incorrect insertion of the conductor underneath the tension sleeve
- ✓ The latching on the side enables various numbers of positions to be combined



Make sure you always use the latest documentation.

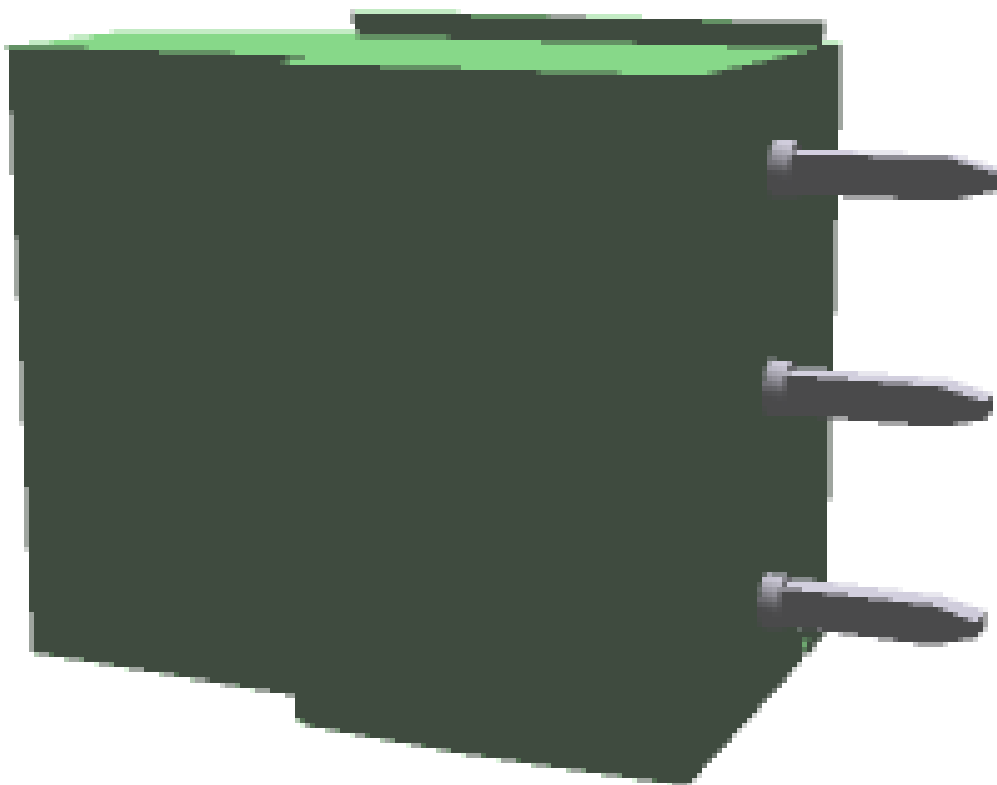
It can be downloaded at: phoenixcontact.net/product/1711039

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



1711039 MKDS 3/3**5 item properties**

| | |
|-----------------------|---|
| Order No. | 1711039 |
| Type | MKDS 3/3 |
| Range of articles | MKDS 3 |
| Pitch | 5 mm |
| Number of positions | 3 |
| Connection method | Screw connection with tension sleeve |
| Drive form screw head | Slotted |
| Screw thread | M3 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| Mounting type | Wave soldering |
| Pin layout | Linear pinning |
| Product note | The article can be aligned to create different nos. of positions! |

5.1 Connection capacity

| | |
|--|--|
| Conductor cross section, solid | 0.2 mm ² to 4 mm ² |
| Conductor cross section, flexible | 0.2 mm ² to 2.5 mm ² |
| Conductor cross section AWG/kcmil | 24 to 12 |
| 2 conductors with same cross section, solid | 0.2 mm ² to 1.5 mm ² |
| 2 conductors with same cross section, stranded | 0.2 mm ² to 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² to 2.5 mm ² |
| Conductor cross section flexible, with ferrule with plastic sleeve | 0.25 mm ² to 2.5 mm ² |
| 2 conductors with same cross section, stranded, with ferrule without plastic sleeve | 0.25 mm ² to 0.75 mm ² |
| 2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve | 0.5 mm ² to 1.5 mm ² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 2.8 mm / 2.5 mm |
| Stripping length | 8 mm |

5.2 Material data

| | |
|---|---|
| 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 | Sn 4 µm ... 8 µm |
| Soldering area surface | Sn 4 µm ... 8 µm |
| Surface characteristics | Tin-plated |
| Insulating material data | |
| Insulating material | PA |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |
| Color | green (6021) |
| 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 |

1711039 MKDS 3/ 3**6 Dimensions****6.1 Dimensions for the product**

| | |
|-----------------------------|---------|
| Length | 11.2 mm |
| Width | 15 mm |
| Height (without solder pin) | 18 mm |
| Total height | 23 mm |
| Solder pin [P] | 5 mm |
| Dimension a | 10 mm |

6.2 Dimensions for PCB design

| | |
|----------------|--------------|
| Hole diameter | 1.3 mm |
| Pin dimensions | 0,9 x 0,9 mm |
| Pin spacing | 5 mm |

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8 Packaging information

| | |
|--------------------|---------------------|
| Type of packaging | packed in cardboard |
| Pieces per package | 100 |

9 Application

9.1 Temperature limit values

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

1711039 MKDS 3/3**10 Mechanical tests****10.1 Torque test**

| | |
|-------------------|-----------------------|
| Specification | IEC 60998-2-1:2002-12 |
| Result | Test passed |
| Screw thread | M3 |
| Tightening torque | 0.5 Nm to 0.6 Nm |

10.2 Check for damage to conductor or loosening

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

10.3 Pull-out test

| | |
|--|---|
| Specification | IEC 60998-2-1:2002-12 |
| Result | Test passed |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm ² / solid / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm ² / stranded / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 4 mm ² / solid / > 60 N |
| Conductor cross section/conductor type/tractive force actual value | 2.5 mm ² / stranded / > 50 N |

1711039 MKDS 3/3**11 Electrical tests****11.1 Electrical data**

| | |
|---|----------------------------|
| Rated current / conductor cross section | 24 A / 2.5 mm ² |
| Rated insulation voltage (III/2) | 400 V |
| Rated surge voltage (III/2) | 4 kV |
| Contact resistance | 0.4 mΩ |
| Degree of pollution | 2 |

11.2 Air clearances and creepage distances

| | | | |
|---|---|-------|--------|
| 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 | 250 V | 400 V | 630 V |
| Rated surge voltage | 4 kV | 4 kV | 4 kV |
| Degree of pollution | 3 | 2 | 2 |
| Overvoltage category | III | III | II |
| Minimum clearance case A (inhomogeneous field) | 3 mm | 3 mm | 3 mm |
| Minimum value of the creepage path requirement in acc. with table | 3.2 mm | 3 mm | 3.2 mm |
| Note on connection cross section | With connected conductor 4 mm ² (solid). | | |
| Note | | | |

11.3 Temperature rise test

| | |
|---|-----------------------------------|
| Specification | IEC 60998-1:2002-12 |
| Result | Test passed |
| Requirement temperature-rise test | Increase in temperature ≤ 45 K |
| Conductor cross section/test current/temperature rise | 4 mm ² / 32 A / 36 K |
| Specification | Following IEC 60512-5-2:2002-02 |
| Result | Test passed |
| Conductor cross section/test current/temperature rise | 2.5 mm ² / 24 A / 38 K |

1711039 MKDS 3/3**12 Current carrying capacity/derating curves**

| | |
|---------------------|-----------------------|
| Specification | IEC 60512-5-2:2002-02 |
| Reduction factor | 1 |
| Number of positions | 5 |

Type: MKDS 3/2 and MKDS 3/3**Test following DIN EN 60512-5-2:2003-01****Reduction factor = 1****No. of positions: 5**

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1711039 MKDS 3/3**13 Environmental and durability tests****13.1 Resistance to ageing, humidity and penetration of solids**

| | |
|---------------|---------------------|
| Specification | IEC 60998-1:2002-12 |
| Result | Test passed |
| Dry heat | 168 h/100°C |
| Damp heat | 48 h/30 °C/92 % |

13.2 Insulation resistance

| | |
|--|---------------------|
| Specification | IEC 60998-1:2002-12 |
| Result | Test passed |
| Insulation resistance, neighboring positions | 10 ⁹ Ω |

13.3 Test of the power frequency electric strength

| | |
|--|---------------------|
| Specification | IEC 60998-1:2002-12 |
| Result | Test passed |
| Test voltage between neighboring positions | 3 kV |

13.4 Glow-wire test

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

13.5 Mechanical strength/tumbling barrel

| | |
|-----------------------|---------------------|
| Specification | IEC 60998-1:2002-12 |
| Result | Test passed |
| Height of fall | 50 cm |
| Number of drop cycles | 50 |


13.6 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) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |

| | |
|---------------|---|
| Specification | IEC 61032:1997-12 |
| Note | unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB |

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14 Approvals

| CSA  | | | | |
|---|-------|-------|--|--|
| Use group | B | D | | |
| mm ² /AWG/kcmil | 28-12 | 28-12 | | |
| Voltage | 300 V | 300 V | | |
| Current | 10 A | 10 A | | |

| SEV  | | | | |
|---|-------|--|--|--|
| mm ² /AWG/kcmil | 4 | | | |
| Voltage | 250 V | | | |
| Current | 28 A | | | |

| CCA | | | | |
|----------------------------|-------|--|--|--|
| mm ² /AWG/kcmil | 4 | | | |
| Voltage | 250 V | | | |
| Current | | | | |

| EAC  | | | | |
|---|--|--|--|--|
| | | | | |

| cULus Recognized  | | | | |
|--|-------|-------|--|--|
| Use group | B | D | | |
| mm ² /AWG/kcmil | 30-12 | 30-12 | | |
| Voltage | 300 V | 300 V | | |
| Current | 15 A | 10 A | | |

| DNV GL | | | | |
|--------|--|--|--|--|
| | | | | |

1711039 MKDS 3/3**15 Commercial Data**

| | |
|--------------------|--|
| Order No. | 1711039 |
| Type | MKDS 3/3 |
| Pieces per package | 100 |
| Net weight | 5.663 g |
| GTIN | 4017918023669 |
| | Information that applies locally, see link on page 1 |
| Country of origin | Information that applies locally, see link on page 1 |

16 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 |
| Pitch spacer, for adjusting the pitches between MKDS and GMKDS terminal blocks in mixed rows, 1.25 mm thick | 1703047 | RZ 1,25-MKDS 3 |
| | 0804183 | SK 5/3,8:FORTL.ZAHLEN |
| | 0805409 | SK 5/3,8:UNBEDRUCKT |
| | 0805072 | SK 5/3,8:SO |
| | 0803906 | SK U/3,8 WH:UNBEDRUCKT |
| Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm | 1051993 | B-STIFT |



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