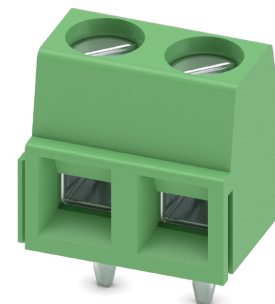


# Data sheet

Item No.: 1729128

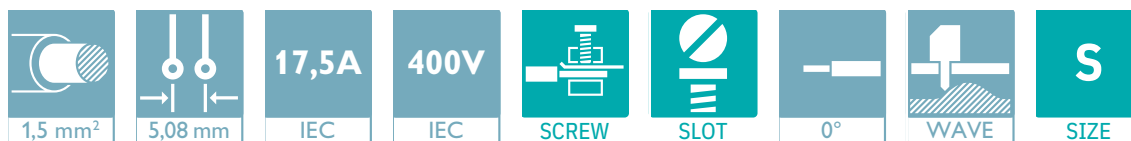
Type: MKDSN 1,5/ 2-5,08

PCB terminal block, Wave soldering, Screw connection with tension sleeve



The design shown in the illustrations and 3D data may differ from the original item due to pro-

## 1 Main features



|                           |                                      |                        |                     |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos.             | 2                                    | • Nominal current      | 17.5 A              |
| • Conductor cross section | 1.5 mm <sup>2</sup>                  | • Nominal voltage      | 400 V               |
| • Color                   | green (RAL 6021)                     | • Connection direction | 0°                  |
| • Pitch                   | 5.08 mm                              | • Type of packaging    | packed in cardboard |
| • Connection method       | Screw connection with tension sleeve | • Mounting type        | Wave soldering      |

## 2 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
- ✓ 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.com/product/1729128](https://phoenixcontact.com/product/1729128)

**3 Table of contents**

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1729128 MKDSN 1,5/ 2-5,08

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



**1729128 MKDSN 1,5/ 2-5,08****5 General Technical Data****5.1 item properties**

|                                                  |                                      |
|--------------------------------------------------|--------------------------------------|
| Item no.                                         | 1729128                              |
| Type                                             | MKDSN 1,5/ 2-5,08                    |
| Product line                                     | COMBICON Terminals S                 |
| Product type                                     | PCB terminal block                   |
| Range of articles                                | MKDSN 1,5                            |
| Pitch                                            | 5.08 mm                              |
| Number of positions                              | 2                                    |
| Number of rows                                   | 1                                    |
| Number of connections                            | 2                                    |
| Number of potentials                             | 2                                    |
| Connection method                                | Screw connection with tension sleeve |
| Screw thread                                     | M3                                   |
| Drive form screw head                            | Slotted (L)                          |
| Connection direction of the conductor to the PCB | 0 °                                  |
| Pin layout                                       | Linear pinning                       |
| Solder pins per potential                        | 1                                    |
| Type                                             | PC termination block                 |

**1729128 MKDSN 1,5/ 2-5,08****6 Instruction****6.1 Connection capacity**

|                                                                                        |                                               |
|----------------------------------------------------------------------------------------|-----------------------------------------------|
| 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 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, solid                                            | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| 2 conductors with same cross section, stranded                                         | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| 2 conductors with same cross section, stranded, 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 and plastic sleeve | 0.5 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>  |
| Stripping length                                                                       | 6 mm                                          |
| Tightening torque                                                                      | 0.5 Nm ... 0.6 Nm                             |

**6.2 Connection capacity AWG**

|                             |           |
|-----------------------------|-----------|
| Conductor cross section AWG | 26 ... 16 |
|-----------------------------|-----------|

**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  | Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)                                |
| Soldering area surface  | Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)                                |
| Surface characteristics | Tin-plated                                                              |

**7.2 Material of plastic parts**

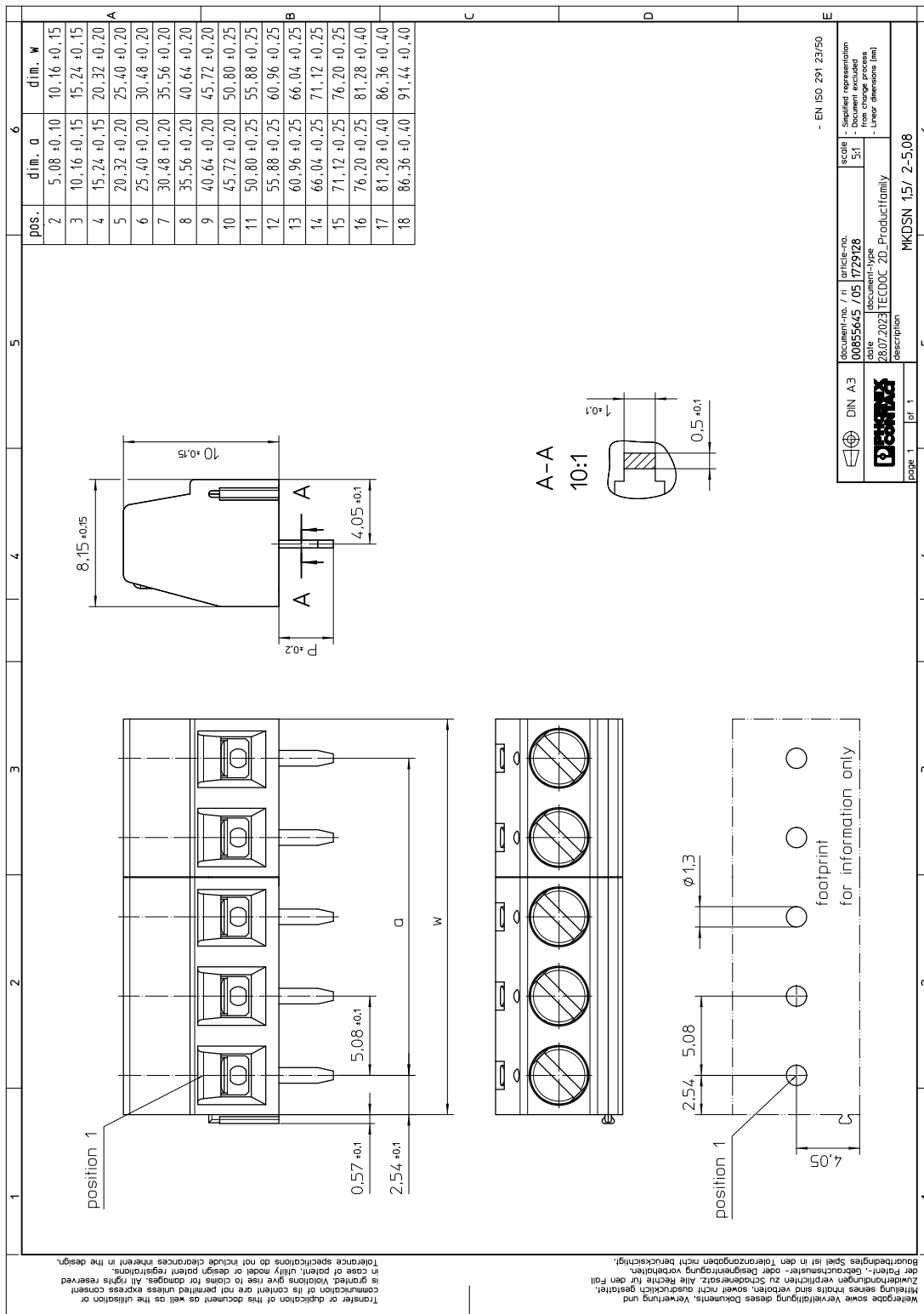
|                                                                   |                  |
|-------------------------------------------------------------------|------------------|
|                                                                   | <b>Housing</b>   |
| Color                                                             | green (RAL 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           |

**1729128 MKDSN 1,5/ 2-5,08****8 Dimensions****8.1 Dimensions for the product**

|                             |          |
|-----------------------------|----------|
| Length                      | 8.1 mm   |
| Width                       | 10.16 mm |
| Height (without solder pin) | 10 mm    |
| Total height                | 13.5 mm  |
| Solder pin [P]              | 3.5 mm   |

1729128 MKDSN 1,5/ 2-5,08







9 Series drawing



|             |                                          |                                          |                    |                                                                                                                        |
|-------------|------------------------------------------|------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------|
| DIN A3      | document-no. / h<br>00855645 / 051729128 | article-no.<br>51                        | scale<br>5:1       | scale - Supplied representation<br>- Supplied representation<br>- Footprint representation<br>- Linear dimensions (mm) |
| TECDOC      | date<br>28.07.2023                       | document-type<br>TECDOC 2D_Productfamily | - EN ISO 291:23/50 |                                                                                                                        |
| page 1 of 1 | description<br>MKDSN 1,5/ 2-5,08         |                                          |                    |                                                                                                                        |

# 1729128 MKDSN 1,5/ 2-5,08

## 10 Product drawing

|                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |
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| A                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |   |  |  |  |  |  | B                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |   |  |  |  |  |  | C                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |   |  |  |  |  |  | D                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  | E                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |   |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |
| <p>General Information<br/>         - Simplified representation<br/>         - Document excluded from change process<br/>         - Linear dimensions (mm)</p>                                                                                                                                                                                                                                                            |  |  |  |  |  |   |  |  |  |  |  | <p>document-No. / Ri<br/>01055517 / 00</p>                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |   |  |  |  |  |  | <p>date<br/>22.02.2017</p>                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |   |  |  |  |  |  | <p>scale<br/>1:1</p>                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  | <p>document-type<br/>TECDOC 2D_Productdrawing</p>                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  | <p>description<br/>MKDSN 1,5/ 2-5,08</p>                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |
| <p>DIN A3</p>                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |  |  |  |   |  |  |  |  |  | <p>page 1 of 1</p>                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |   |  |  |  |  |  | <p>1</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |   |  |  |  |  |  | <p>5</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  | <p>6</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |



**1729128 MKDSN 1,5/ 2-5,08****11 Product note****11.1 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).

**11.2 Dimensions for PCB design**

Hole diameter

1.3 mm

Pin dimensions

0.5 x 1 mm

**12 Application****13 Packaging specifications**

Type of packaging

packed in cardboard

Packing unit

260

**13.1 Processing notes**

Process

Wave soldering

Specification

IEC 61760-1:2006-04 (following)

Specification

IEC 60068-2-54:2006-04 (following)

**13.2 Temperature limit values**

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)

**1729128 MKDSN 1,5/ 2-5,08****14 Mechanical tests****14.1 Pull-out test**

|                                                                    |                                          |
|--------------------------------------------------------------------|------------------------------------------|
| Specification                                                      | IEC 60999-1:1999-11                      |
| Result                                                             | Test passed                              |
| Conductor cross section/conductor type/tractive force actual value | 0.14 mm <sup>2</sup> / solid / > 10 N    |
| Conductor cross section/conductor type/tractive force actual value | 0.14 mm <sup>2</sup> / flexible / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm <sup>2</sup> / solid / > 40 N     |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm <sup>2</sup> / flexible / > 40 N  |

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

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

**1729128 MKDSN 1,5/ 2-5,08****15 Electrical tests**

|                                         |                              |
|-----------------------------------------|------------------------------|
| Rated current / conductor cross section | 17.5 A / 1.5 mm <sup>2</sup> |
| Rated insulation voltage (III/2)        | 400 V                        |
| Rated surge voltage (III/2)             | 4 kV                         |
| Contact resistance                      | 1.35 mΩ                      |
| Degree of pollution                     | 2                            |

**15.1 Short-time withstand current test**

|                                            |                            |
|--------------------------------------------|----------------------------|
| Specification                              | IEC 60947-7-4:2019-01      |
| Result                                     | Test passed                |
| Conductor cross section/short-time current | 1.5 mm <sup>2</sup> / 60 A |

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

|                                                                      |                               |
|----------------------------------------------------------------------|-------------------------------|
| Specification                                                        | IEC 60947-7-4:2019-01         |
| Result                                                               | Test passed                   |
| Contact resistance R <sub>1</sub>                                    | 1.35 mΩ / 1.5 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>                                    | 1.37 mΩ / 1.5 mm <sup>2</sup> |
| Rated impulse voltage at sea level<br>Voltage waveform ≥ (1.2/50 μs) | 4.8 kV                        |
| Power-frequency withstand voltage<br>Voltage waveform ≥ (50/60 Hz)   | 2.2 kV                        |

**15.3 Insulation resistance**

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

**15.4 Mechanical connection test for the PCB terminal block**

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

**15.5 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 | 1.5 mm <sup>2</sup> / 17.5 A / 44.6 K                                                                                          |

**1729128 MKDSN 1,5/ 2-5,08****16 Air and creepage distances**

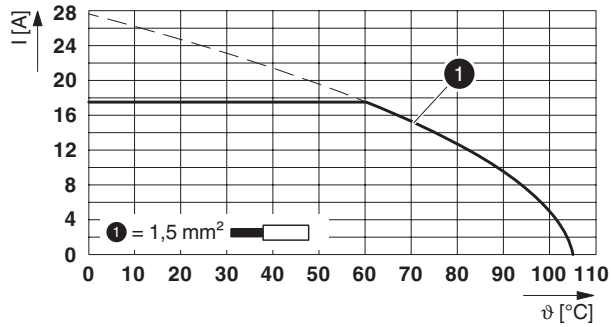
|                                                                   |                                               |       |        |
|-------------------------------------------------------------------|-----------------------------------------------|-------|--------|
| Component                                                         | PCB terminal block                            |       |        |
| Specification                                                     | IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09 |       |        |
| Mains type                                                        | unearthed mains                               |       |        |
| Insulating material group                                         | I                                             |       |        |
| Comparative tracking index (IEC 60112)                            | 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 |

## 1729128 MKDSN 1,5/ 2-5,08

## 17 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 | 1.5 mm <sup>2</sup>                           |

## Type: MKDSN 1,5/...-5,08



**1729128 MKDSN 1,5/ 2-5,08****18 Environmental and durability tests****18.1 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 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           |
| Note                   |                             |

**18.2 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                    |  |  |

## 1729128 MKDSN 1,5/ 2-5,08

## 19 Approvals / Certificates

| EAC ENEC                                                                                                 |             |             |                     |                                  |
|----------------------------------------------------------------------------------------------------------|-------------|-------------|---------------------|----------------------------------|
| cULus Recognized        |             |             |                     |                                  |
|                                                                                                          | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
| <b>Usegroup B</b>                                                                                        |             |             |                     |                                  |
| Mehrleiteranschluss                                                                                      | 300 V       | 10 A        | 2X - 18             | -                                |
| Schraubanschluss                                                                                         | 300 V       | 10 A        | 30 - 14             | -                                |
| <b>Usegroup D</b>                                                                                        |             |             |                     |                                  |
| Mehrleiteranschluss                                                                                      | 300 V       | 10 A        | 2X - 18             | -                                |
| Schraubanschluss                                                                                         | 300 V       | 10 A        | 30 - 14             | -                                |
| DNV GL                  |             |             |                     |                                  |
| IECEE CB Scheme         |             |             |                     |                                  |
|                                                                                                          | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
|                                                                                                          | 400 V       | 13.5 A      | -                   | 0.2 - 1.5                        |
| VDE Zeichengenehmigung  |             |             |                     |                                  |
|                                                                                                          | Voltage [V] | Current [A] | Cross section [AWG] | Cross section [mm <sup>2</sup> ] |
|                                                                                                          | 400 V       | 17.5 A      | -                   | 0.2 - 1.5                        |

**1729128 MKDSN 1,5/ 2-5,08****20 Commercial Data**

|              |                                                      |
|--------------|------------------------------------------------------|
| Item no.     | 1729128                                              |
| Type         | MKDSN 1,5/ 2-5,08                                    |
| Packing unit | 260                                                  |
| Net weight   | 1.8 g                                                |
| GTIN         | 4017918025991                                        |
|              | Information that applies locally, see link on page 1 |

**21 Accessories**

| Description                                                                                                                                                      | Item 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              |
|                                                                                                                                                                  | 0804293  | SK 5,08/3,8:FORTL.ZAHLEN |
|                                                                                                                                                                  | 0805412  | SK 5,08/3,8:UNBEDRUCKT   |