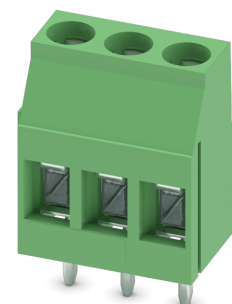


Item No.: 1711039

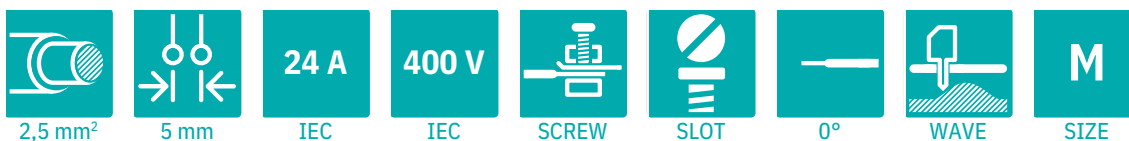
Type: MKDS 3/ 3

PCB terminal block, Screw connection with tension sleeve



The design shown may differ from the original item due to production processes!

1 Main features



• No. of pos.	3	• Nominal current	24 A
• Conductor cross section	2.5 mm ²	• Nominal voltage	400 V
• Color	green (RAL 6021)	• Connection direction	0 °
• Pitch	5 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
- ✓ 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



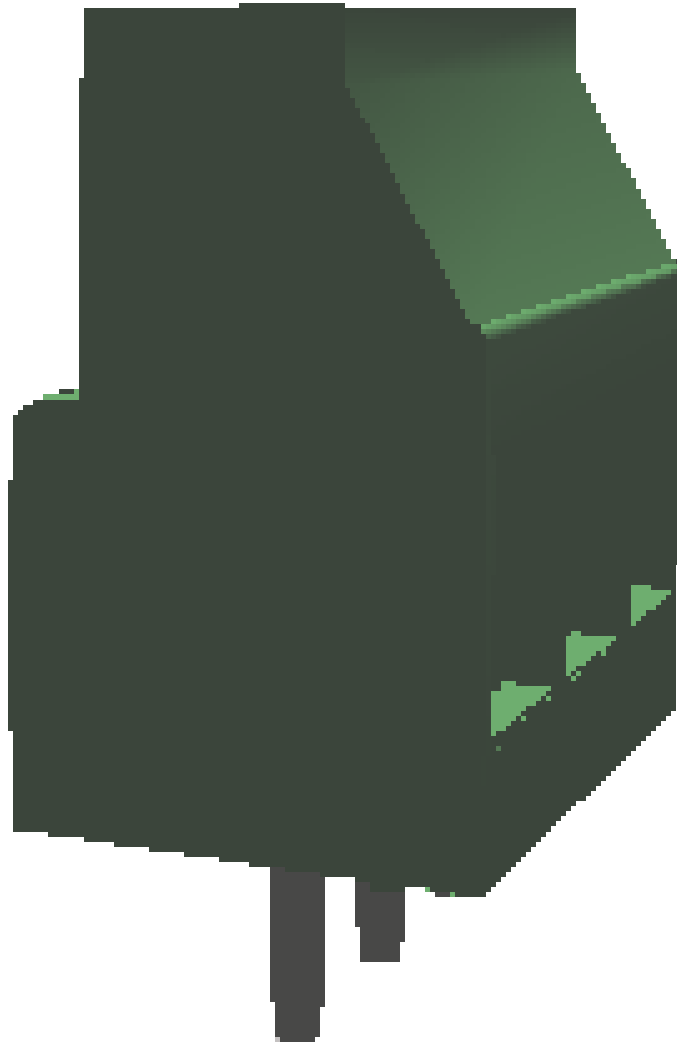
Make sure you always use the latest documentation.

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

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



1711039 MKDS 3/ 3**5 General Technical Data****5.1 item properties**

Item no.	1711039
Type	MKDS 3/ 3
Product line	COMBICON Terminals M
Product type	PCB terminal block
Range of articles	MKDS 3
Pitch	5 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 (L)
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

1711039 MKDS 3/3**6 Conductor connection****6.1 Connection capacity**

Conductor cross section, rigid	0.2 mm ² ... 4 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 2.5 mm ²
2 conductors with same cross section, solid	0.2 mm ² ... 1.5 mm ²
2 conductors with same cross section, stranded	0.2 mm ² ... 1.5 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² ... 0.75 mm ²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm ² ... 1.5 mm ²
Stripping length	8 mm
Tightening torque	0.5 Nm ... 0.6 Nm

6.2 Connection capacity AWG

Conductor cross section AWG	24 ... 12
-----------------------------	-----------

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

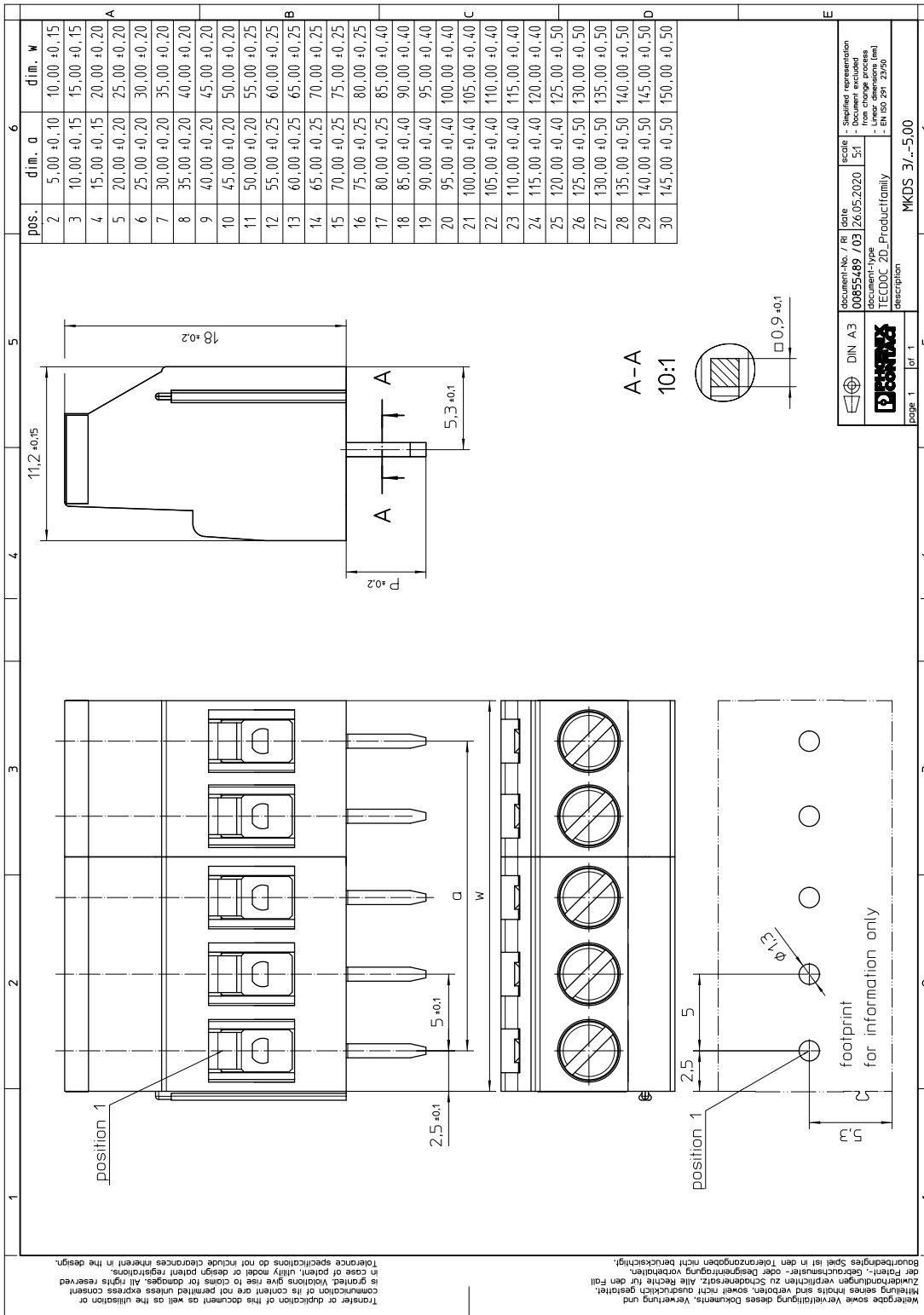
	Housing
Color	green (RAL 6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C

1711039 MKDS 3/3**8 Dimensions****8.1 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

1711039 MKDS 3/3

9 Series drawing



DIN A3	document-No. / Ri / title	scale	Supplied representation
	00655469 / 03	5:1	- Reduced representation
	TECDOC 2D_Productfamily		- Free dimensions (mm)
			- Linear dimensions (mm)
			- EN ISO 291: 2950
page 1	of 1		
			MKDS 3/-5.00

10 Product note

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
Pin spacing	5 mm

11 Application

12 Packaging specifications

Type of packaging	packed in cardboard
Packing unit	100

12.1 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)

1711039 MKDS 3/3**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 ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / flexible / > 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 / flexible / > 50 N

13.2 Check for damage to conductor or loosening

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

1711039 MKDS 3/3**14 Electrical tests**

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	0.32 mΩ
Degree of pollution	2

14.1 Short-time withstand current test

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Conductor cross section/short-time current	4 mm ² / 97.2 A

14.2 Aging test (climatic impact and corrosion testing)

Specification	IEC 60947-7-4:2019-01
Result	Test passed
Contact resistance R ₁	0.32 mΩ / 4 mm ²
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 ₂	0.32 mΩ / 4 mm ²
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	3.1 kV

14.3 Insulation resistance

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

14.4 Mechanical connection test for the PCB terminal block

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

14.5 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	4 mm ² / 32 A / 40.2 K
Conductor cross section/test current/temperature rise	2.5 mm ² / 24 A / 33.1 K

1711039 MKDS 3/ 3

15 Air and creepage distances

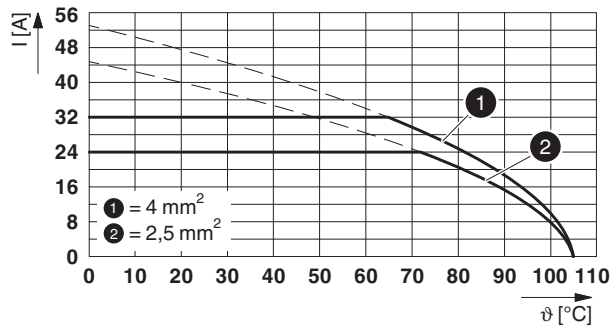
Component	PCB terminal block		
Specification	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112)	CTI 600		
Rated insulation voltage	250 V	400 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	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

1711039 MKDS 3/3

16 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	2.5 mm ²

Type: MKDS 3/...



1711039 MKDS 3/3**17 Environmental and durability tests****17.1 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	

17.2 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		

1711039 MKDS 3/3

18 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	10 A	28 - 12	-
Usegroup D				
	300 V	10 A	28 - 12	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
Mehrleiteranschluss	300 V	15 A	30 - 18	-
Schraubanschluss	300 V	15 A	30 - 12	-
Usegroup D				
Mehrleiteranschluss	300 V	10 A	30 - 18	-
Schraubanschluss	300 V	10 A	30 - 12	-
DNV GL 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	400 V	32 A	-	0.2 - 4

1711039 MKDS 3/3**19 Commercial Data**

Item no.	1711039
Type	MKDS 3/ 3
Packing unit	100
Net weight	5.663 g
GTIN	4017918023669
	Information that applies locally, see link on page 1

20 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
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
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT