

## PCB terminal block - MKDS 1/ 4-3,5 BD:-+H - 1715072

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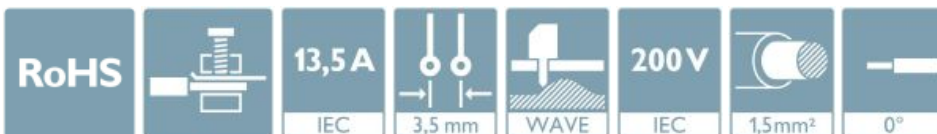
PCB terminal block, nominal current: 13.5 A, rated voltage (III/2): 200 V, nominal cross section: 1.5 mm<sup>2</sup>, product range: MKDS 1, pitch: 3.5 mm, connection method: Screw connection with tension sleeve, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, type of packaging: packed in cardboard



The figure shows a 10-position version of the product

### 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



### Key Commercial Data

Packing unit	50 pc
GTIN	
GTIN	4055626385419

### Technical data

#### Item properties

Brief article description	PCB terminal block
Range of articles	MKDS 1
Pitch	3.5 mm
Number of positions	4
Screw thread	M2
Mounting type	Wave soldering
Pin layout	Linear pinning
Number of levels	1
Number of connections	4
Number of potentials	4

# PCB terminal block - MKDS 1/ 4-3,5 BD:-+H - 1715072

## Technical data

### Electrical parameters

Nominal current	13.5 A
Nom. voltage	200 V
Rated voltage	160 V
Rated voltage (III/2)	200 V
Rated voltage (II/2)	400 V
Rated surge voltage (III/3)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (II/2)	2.5 kV

### Connection capacity

Connection method	Screw connection with tension sleeve
pluggable	no
Conductor cross section solid	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 AWG / kcmil	26 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
2 conductors with same cross section, solid	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	- / 1.6 mm
Stripping length	5 mm
Torque	0.22 Nm ... 0.25 Nm

### 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 (5 - 7 µm Sn)
Metal surface terminal point (middle layer)	Nickel (2 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (5 - 7 µm Sn)
Metal surface soldering area (middle layer)	Nickel (2 - 3 µm Ni)

### Material data - housing

Housing 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

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## Technical data

### Dimensions for the product

Caption	Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center
Length [ l ]	7.3 mm
Width [ w ]	7.3 mm
Height [ h ]	8.5 mm
Pitch	3.5 mm
Height (without solder pin)	9 mm
Solder pin [P]	3.5 mm
Pin dimensions	0.5 x 0.9 mm

### Dimensions for PCB design

Hole diameter	1.1 mm
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### Packaging information

Type of packaging	packed in cardboard
Pieces per package	50
Denomination packing units	Pcs.

### General product information

Type of note	Note on application
Note	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).

### Ambient conditions

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

### Termination and connection method

Test for conductor damage and slackening	IEC 60998-2-1:2002-12
	Test passed

### Pull-out test

Pull-out test	IEC 60998-2-1:2002-12
	Test passed
Conductor cross section / conductor type / tensile force	0.14 mm <sup>2</sup> / solid / > 10 N
	0.14 mm <sup>2</sup> / flexible / > 10 N
	1.5 mm <sup>2</sup> / solid / > 40 N
	1.5 mm <sup>2</sup> / flexible / > 40 N

### Mechanical tests according to standard

Test specification	IEC 60998-2-1 (in parts)
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## Technical data

### Electrical tests

Rated current	13.5 A
Conductor cross section	1.5 mm <sup>2</sup>
Rated voltage (III/2)	200 V
Rated surge voltage (III/2)	2.5 kV

### Air clearances and creepage distances

Clearances and creepage distances	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09
Specification	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09
Minimum clearance - inhomogeneous field (III/3)	1.5 mm
Minimum clearance - inhomogeneous field (III/2)	1.5 mm
Minimum clearance - inhomogeneous field (II/2)	1.5 mm
Minimum creepage distance value (III/3)	2 mm
Minimum creepage distance value (III/2)	1.5 mm
Minimum creepage distance value (II/2)	2 mm
Note on connection cross section	With connected conductor 1.5 mm <sup>2</sup> (stranded).

### Temperature-rise test

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

### Current carrying capacity / derating curves

Caption	Type: MKDS 1/5-3,5 Test following DIN EN 60512-5-2:2003-01 Reduction factor = 1 No. of positions = 5
Specification	Following IEC 60512-5-2:2002-02
Number of positions	5
Reduction factor	1

### 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

### Resistance to ageing, humidity and penetration of solids

Dry heat	168 h/100°C
Humid heat	48 h/30 °C/92 %

### Insulation resistance

Specification	IEC 60998-1:2002-12
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# PCB terminal block - MKDS 1/ 4-3,5 BD:-+H - 1715072

## Technical data

### Insulation resistance

Result	Test passed
Insulation resistance, neighboring positions	1 GΩ

### Glow-wire test

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

### Mechanical strength/tumbling barrel test

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

### Test finger safety

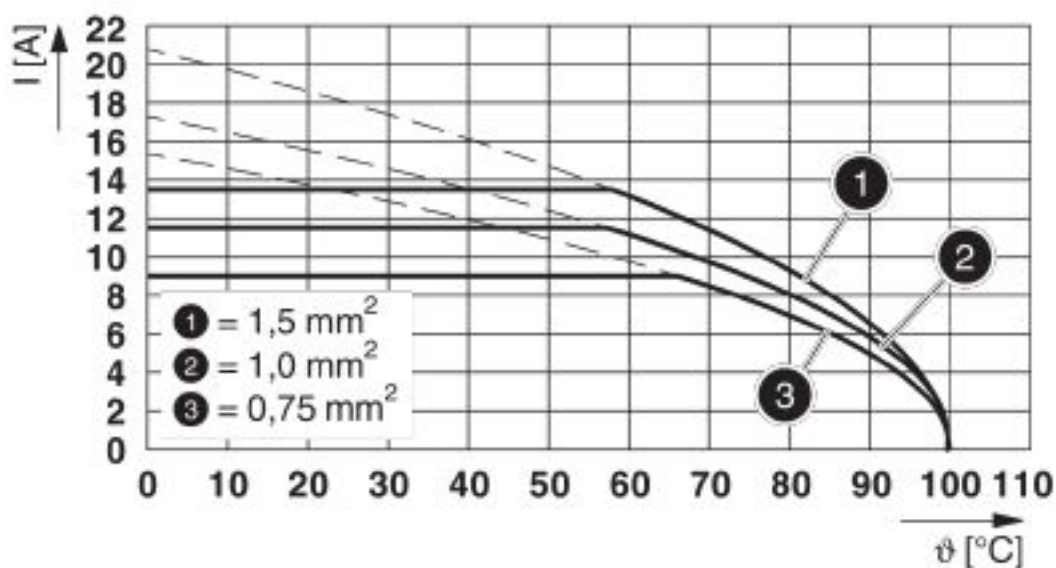
Result	Test passed
Specification	IEC 60998-1:2002-12

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Diagram



# PCB terminal block - MKDS 1/ 4-3,5 BD:-+H - 1715072

Test following DIN EN 60512-5-2:2003-01

Reduction factor = 1

No. of positions = 5

## Classifications

### eCl@ss

eCl@ss 10.0.1	27440401
eCl@ss 5.1	27261100
eCl@ss 6.0	27261100
eCl@ss 7.0	27440401
eCl@ss 8.0	27440401
eCl@ss 9.0	27440401

### ETIM

ETIM 5.0	EC002643
ETIM 6.0	EC002643
ETIM 7.0	EC002643

## Approvals

### Approvals

Approvals

IECEE CB Scheme / SEV / EAC / cULus Recognized

Ex Approvals

### Approval details

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	CH-10787
Nominal voltage UN	160 V		
Nominal current IN	12 A		
mm <sup>2</sup> /AWG/kcmil	1.5		

SEV		<a href="https://www.eurofins.ch/de/">https://www.eurofins.ch/de/</a>	IK-4497
Nominal voltage UN	160 V		
Nominal current IN	12 A		

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## Approvals

mm <sup>2</sup> /AWG/kcmil	1.5
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EAC		B.01687
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cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	E60425-19770427
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	B	D
Nominal voltage UN	300 V	300 V
Nominal current IN	10 A	10 A
mm <sup>2</sup> /AWG/kcmil	30-16	30-16

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PHOENIX CONTACT GmbH & Co. KG  
 Flachsmarktstr. 8  
 32825 Blomberg  
 Germany  
 Tel. +49 5235 300  
 Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>