

# MKDS 5/ 5-6,35 BK Z1L TS - PCB terminal block



1831031

<https://www.phoenixcontact.com/us/products/1831031>

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Printed circuit board terminal, nominal current: 32 A, rated voltage (III/2): 630 V, nominal cross section: 4 mm<sup>2</sup>, number of potentials: 5, number of rows: 1, number of positions per row: 5, product range: MKDS 5, pitch: 6.35 mm, connection method: Screw connection with tension sleeve, screw head form: Z1L Slotted Pozidriv, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: black, Pin layout: Linear pinning, Solder pin [P]: 5.1 mm, number of solder pins per potential: 1, type of packaging: packed in cardboard

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors
- The latching on the side enables various numbers of positions to be combined

## Commercial data

Item number	1831031
Packing unit	50 pc
Minimum order quantity	50 pc
Note	Made to order (non-returnable)
Product key	AANFDC
GTIN	4046356890755
Weight per piece (including packing)	13.29 g
Weight per piece (excluding packing)	12.717 g
Country of origin	DE

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## Technical data

### Product properties

Product type	Printed circuit board terminal
Product family	MKDS 5
Product line	COMBICON Terminals L
Type	PC terminal block can be aligned
Number of positions	5
Pitch	6.35 mm
Number of connections	5
Number of rows	1
Number of potentials	5
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	32 A
Nominal voltage $U_N$	630 V
Rated voltage (III/3)	500 V
Rated surge voltage (III/3)	6 kV
Rated voltage (III/2)	630 V
Rated surge voltage (III/2)	6 kV
Rated voltage (II/2)	1000 V
Rated surge voltage (II/2)	6 kV

### Connection data

#### Connection technology

Type	PC terminal block can be aligned
Nominal cross section	4 mm <sup>2</sup>

#### Conductor connection

Connection method	Screw connection with tension sleeve
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 AWG	24 ... 10
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> ... 2.5 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>

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2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Stripping length	8 mm
Drive form screw head	Slotted Pozidriv (Z1L)
Tightening torque	0.5 Nm ... 0.6 Nm

## Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

## Material specifications

### 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 (4 - 8 µm Sn)
Metal surface soldering area (top layer)	Tin (4 - 8 µm Sn)

### Material data - housing

Color (Housing)	black (9005)
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

## Notes

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).
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## Dimensions

Dimensional drawing	
Pitch	6.35 mm

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Width [w]	31.75 mm
Height [h]	26.6 mm
Length [l]	12.5 mm
Installed height	21.5 mm
Solder pin length [P]	5.1 mm
Pin dimensions	0.9 x 0.9 mm

PCB design	
Hole diameter	1.3 mm

## Mechanical tests

### Test for conductor damage and slackening

Specification	IEC 60998-2-1:1990-04
Result	Test passed

### Pull-out test

Specification	IEC 60998-2-1:1990-04
Conductor cross-section/conductor type/tractive force setpoint/actual value	0.2 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	6 mm <sup>2</sup> / solid / > 80 N
	4 mm <sup>2</sup> / flexible / > 60 N

### Torque test

Specification	IEC 60998-2-1:1990-04
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## Electrical tests

### Temperature-rise test

Specification	IEC 60998-2-1:1990-04
Requirement temperature-rise test	Increase in temperature ≤ 45 K

### Insulation resistance

Specification	IEC 60998-2-1:1990-04
Insulation resistance, neighboring positions	10 <sup>9</sup> Ω

### Air clearances and creepage distances |

Specification	IEC 60664-1:2007-04
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	500 V
Rated surge voltage (III/3)	6 kV
minimum clearance value - non-homogenous field (III/3)	5.5 mm
minimum creepage distance (III/3)	6.3 mm
Note on connection cross section	With connected conductor 6 mm <sup>2</sup> (solid).
Rated insulation voltage (III/2)	630 V
Rated surge voltage (III/2)	6 kV

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minimum clearance value - non-homogenous field (III/2)	5.5 mm
minimum creepage distance (III/2)	5.5 mm
Rated insulation voltage (II/2)	1000 V
Rated surge voltage (II/2)	6 kV
minimum clearance value - non-homogenous field (II/2)	5.5 mm
minimum creepage distance (II/2)	5.5 mm

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:1995-03
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

### Glow-wire test

Specification	IEC 60998-2-1:1990-04
Temperature	850 °C
Time of exposure	5 s

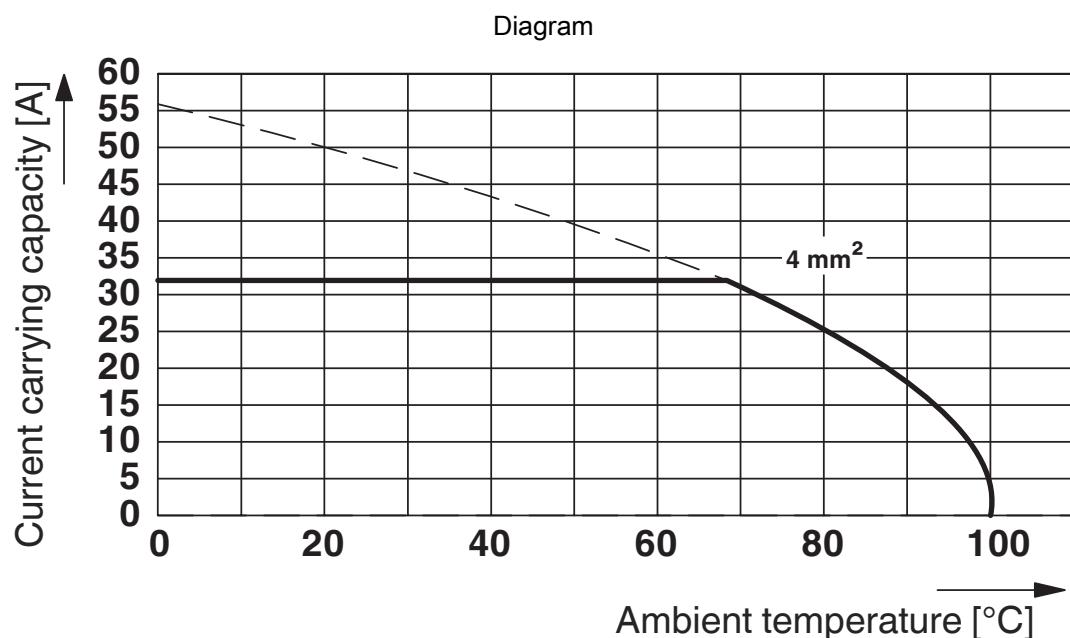
### Ambient conditions

Ambient temperature (operation)	-40 °C ... 100 °C (Depending on the current carrying capacity/derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
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## Drawings



Type: MKDS 5/2-6,35 and MKDS 5/3-6,35

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

Reduction factor = 1

No. of positions: 5

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## Approvals

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cULus Recognized				
Approval ID: E60425-19770427				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	300 V	30 A	30 - 10	-
D	300 V	10 A	30 - 10	-

DNV GL	
Approval ID: TAE00001EV	

VDE approval of drawings				
Approval ID: 40055394				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
keine	630 V	32 A	-	0.2 - 4

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## Classifications

### ECLASS

ECLASS-13.0	27460101
ECLASS-15.0	27460101

### ETIM

ETIM 9.0	EC002643
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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### EF3.0 Climate Change

CO2e kg	0.067 kg CO2e
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