

# KDS10/SO - PCB terminal block

1704059

<https://www.phoenixcontact.com/us/products/1704059>

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The figure shows a 5-pos. version of the product

Printed circuit board terminal, nominal current: 76 A, rated voltage (III/2): 630 V, nominal cross section: 10 mm<sup>2</sup>, number of potentials: 1, number of rows: 1, number of positions per row: 1, product range: KDS 10, pitch: 10 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 4.3 mm, number of solder pins per potential: 4, type of packaging: packed in cardboard. The article can be aligned to create different nos. of positions!

## Your advantages

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

## Commercial data

Item number	1704059
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AA14
Product key	AANFCA
GTIN	4017918023188
Weight per piece (including packing)	16.9 g
Weight per piece (excluding packing)	16.64 g
Customs tariff number	85369010
Country of origin	DE

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## Technical data

### Product properties

Product type	Printed circuit board terminal
Product family	KDS 10
Product line	COMBICON Terminals L
Type	PCB terminal block can be aligned in rows+feed-through terminal block
Number of positions	1
Pitch	10 mm
Number of connections	2
Number of rows	1
Number of potentials	1
Pin layout	Linear pinning
Solder pins per potential	4

### Electrical properties

#### Properties

Nominal current $I_N$	76 A
Nominal voltage $U_N$	630 V
Rated voltage (III/3)	630 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	PCB terminal block can be aligned in rows+feed-through terminal block
Nominal cross section	10 mm <sup>2</sup>

#### Conductor connection

Connection method	Screw connection with tension sleeve
Conductor cross-section rigid	0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross-section flexible	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross-section AWG	20 ... 6
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
2 conductors with same cross section, rigid	0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

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1704059

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without plastic sleeve	
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Stripping length	12 mm
Drive form screw head	Slotted (L)
Tightening torque	1.2 Nm ... 1.5 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 (5 µm - 7 µm Sn)
Metal surface terminal point (middle layer)	Nickel (2 µm - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (5 µm - 7 µm Sn)
Metal surface soldering area (middle layer)	Nickel (2 µm - 3 µm Ni)

### Material data - housing

Color (Housing)	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

## Dimensions

Dimensional drawing	
Pitch	10 mm
Width [w]	10 mm
Height [h]	33.3 mm
Length [l]	36.8 mm
Installed height	29 mm

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1704059

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Solder pin length [P]	4.3 mm
Pin dimensions	1 x 0.9 mm

## PCB design

Hole diameter	1.4 mm
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## Mechanical tests

### Test for conductor damage and slackening

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

### Pull-out test

Specification	IEC 60999-1:1999-11
Conductor cross-section/conductor type/tractive force setpoint/actual value	0.5 mm <sup>2</sup> / solid / > 20 N
	0.5 mm <sup>2</sup> / flexible / > 20 N
	16 mm <sup>2</sup> / solid / > 100 N
	10 mm <sup>2</sup> / flexible / > 90 N

## Electrical tests

### Temperature-rise test

Specification	IEC 60947-7-4:2019-01
Requirement temperature-rise test	The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature.

### Short-time withstand current

Specification	IEC 60947-7-4:2019-01
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### Insulation resistance

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

### Air clearances and creepage distances |

Specification	IEC 60947-7-4:2019-01
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	630 V
Rated surge voltage (III/3)	6 kV
minimum clearance value - non-homogenous field (III/3)	5.5 mm
minimum creepage distance (III/3)	8 mm
Rated insulation voltage (III/2)	630 V
Rated surge voltage (III/2)	6 kV
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

1704059

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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 60068-2-6:2007-12
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 60695-2-10:2013-04
Temperature	850 °C
Time of exposure	5 s

### Aging

Specification	IEC 60947-7-4:2019-01
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### Ambient conditions

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)

## Packaging specifications

Type of packaging	packed in cardboard
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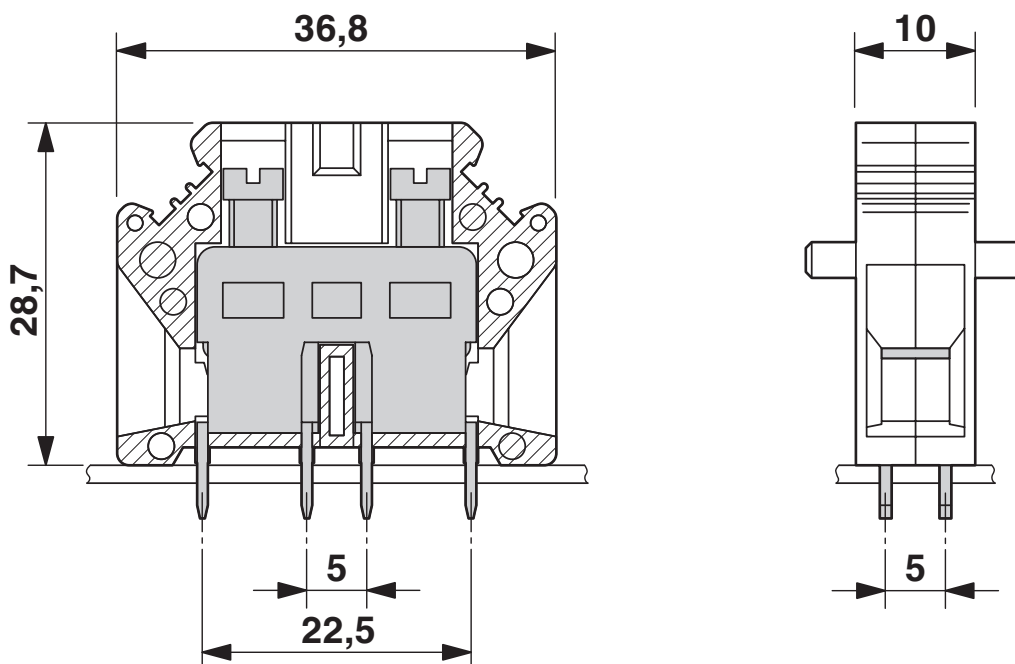
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1704059

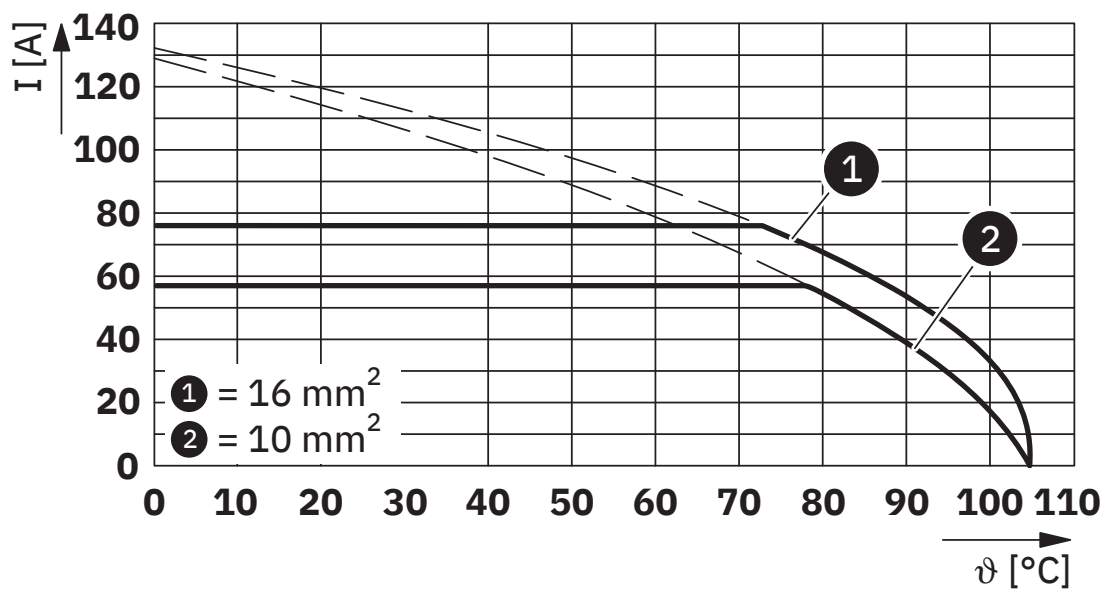
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## Drawings

Dimensional drawing



Diagram



Type: KDS10/SO

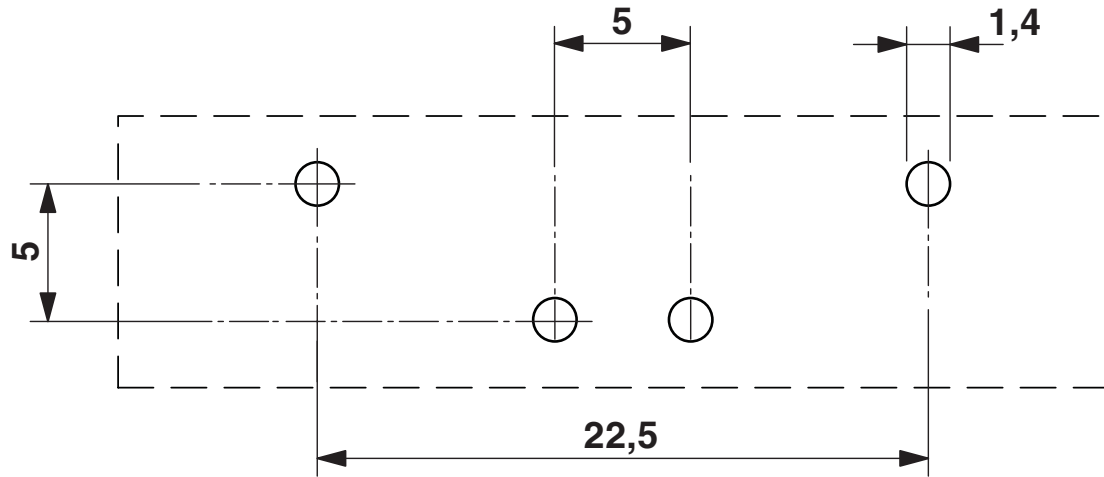
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1704059

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Drilling plan/solder pad geometry



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1704059>

 <b>CSA</b> Approval ID: 13631				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	300 V	65 A	18 - 6	-
C	300 V	65 A	18 - 6	-

 <b>cUL Recognized</b> Approval ID: E60425-19860304				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	250 V	65 A	24 - 6	-
C	300 V	65 A	24 - 6	-
D	600 V	5 A	24 - 6	-

 <b>UL Recognized</b> Approval ID: E60425-19860304				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
B	250 V	65 A	24 - 6	-
C	300 V	65 A	24 - 6	-
D	600 V	5 A	24 - 6	-

 <b>DNV GL</b> Approval ID: TAE00001EV				
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## Classifications

### ECLASS

ECLASS-13.0	27460101
ECLASS-15.0	27460101

### ETIM

ETIM 10.0	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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### EF3.1 Climate Change

CO2e kg	0.093 kg CO2e
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