

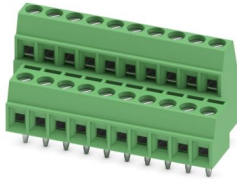
MKKDS 1/ 9-3,5 BK - PCB terminal block



1800049

<https://www.phoenixcontact.com/ae/products/1800049>

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Printed circuit board terminal, nominal current: 8 A, rated voltage (III/2): 200 V, nominal cross section: 1 mm², number of potentials: 18, number of rows: 2, number of positions per row: 9, product range: MKKDS 1, pitch: 3.5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: black, Pin layout: Linear pinning, Solder pin [P]: 3.5 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
- Extremely small design for the respective conductor cross-section
- Conductor connection on several levels enables higher contact density

Commercial data

Item number	1800049
Packing unit	50 pc
Minimum order quantity	50 pc
Note	Made to order (non-returnable)
Sales key	AA
Product key	AALFIB
GTIN	4017918949907
Weight per piece (including packing)	11.27 g
Weight per piece (excluding packing)	10.282 g
Customs tariff number	85369010
Country of origin	IN

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Technical data

Product properties

Product type	Printed circuit board terminal
Product family	MKKDS 1
Product line	COMBICON Terminals S
Type	PC termination block
Number of positions	9
Pitch	3.5 mm
Number of connections	18
Number of rows	2
Number of potentials	18
Pin layout	Linear pinning
Solder pins per potential	1

Electrical properties

Properties

Nominal current I_N	8 A
Nominal voltage U_N	200 V
Rated voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	200 V
Rated surge voltage (III/2)	2.5 kV
Rated voltage (II/2)	400 V
Rated surge voltage (II/2)	2.5 kV

Connection data

Connection technology

Type	PC termination block
Nominal cross section	1 mm ²

Conductor connection

Connection method	Screw connection with tension sleeve
Conductor cross-section rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.14 mm ² ... 1 mm ²
Conductor cross-section AWG	26 ... 16
Conductor cross-section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 0.5 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 0.5 mm ²
2 conductors with same cross section, solid	0.14 mm ² ... 0.5 mm ²
2 conductors with same cross section, flexible	0.14 mm ² ... 0.2 mm ²
Stripping length	5 mm
Drive form screw head	Slotted (L)

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Tightening torque	0.22 Nm ... 0.25 Nm
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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 - 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

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

Dimensions

Dimensional drawing	
Pitch	3.5 mm
Width [w]	33.75 mm
Height [h]	19.7 mm
Length [l]	16.3 mm
Installed height	16.2 mm
Solder pin length [P]	3.5 mm
Pin dimensions	0.5 x 0.9 mm

PCB design

Pin spacing	11.4 mm
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Hole diameter	1.1 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	0.14 mm ² / solid / > 10 N
	0.14 mm ² / flexible / > 10 N
	1.5 mm ² / solid / > 40 N
	1 mm ² / flexible / > 35 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 60947-1:2007-06 + A1:2010-12 + A2:2014-09
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm
minimum creepage distance (III/3)	2 mm
Note on connection cross section	With connected conductor 1.5 mm ² (solid).
Rated insulation voltage (III/2)	200 V
Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.5 mm
Rated insulation voltage (II/2)	400 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	1.5 mm
minimum creepage distance (II/2)	2 mm

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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

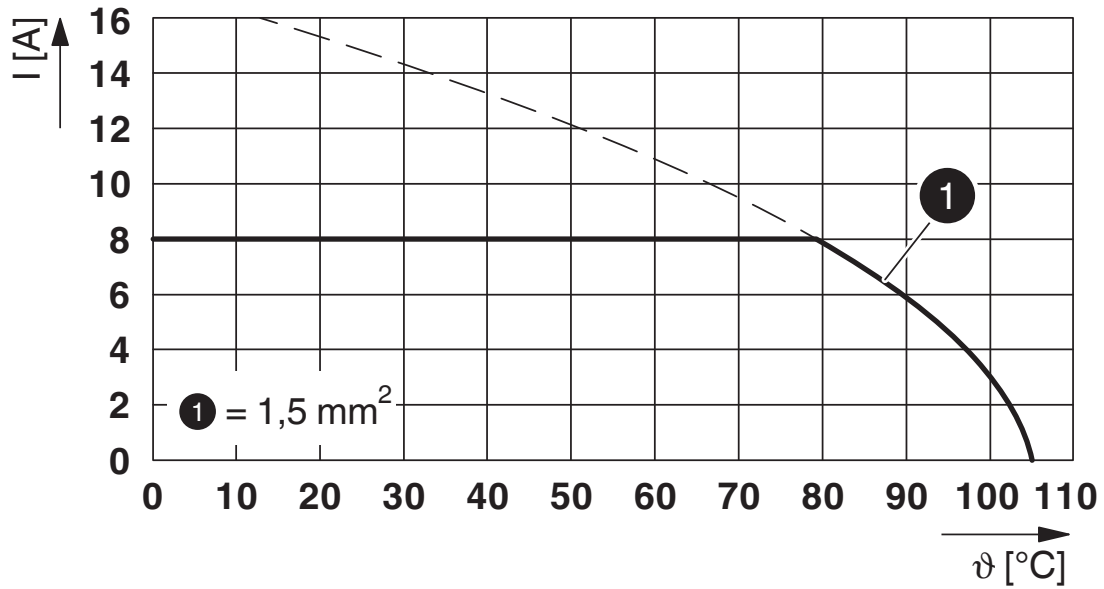
Ambient temperature (operation)	-40 °C ... 105 °C (Depending on the current carrying capacity/derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

Packaging specifications

Type of packaging	packed in cardboard
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Drawings

Diagram



Type: MKKDS 1/...-3,5

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/ae/products/1800049>

 CSA Approval ID: 13631				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
B	150 V	10 A	28 - 16	-
D	300 V	10 A	28 - 16	-

 cULus Recognized Approval ID: E60425-19770427				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
B	300 V	10 A	30 - 16	-
D	300 V	10 A	30 - 16	-

 VDE approval of drawings Approval ID: 40055535				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine	200 V	10 A	-	0.2 - 1.5

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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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