

# FFKDSA1/H-3,81- 4 BK - PCB terminal block



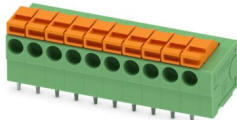
1908020

<https://www.phoenixcontact.com/us/products/1908020>

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Printed circuit board terminal, nominal current: 12 A, rated voltage (III/2): 160 V, nominal cross section: 1 mm<sup>2</sup>, number of potentials: 4, number of rows: 1, number of positions per row: 4, product range: FFKDS(A) 1,5/..-H, pitch: 3.81 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 0 °, color: black, Pin layout: Linear pinning, Solder pin [P]: 3.4 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard



The figure shows a 10-position version of the product

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Intuitive operation due to color-coded actuating push button
- Operation and conductor connection from one direction enable integration into front of device
- Two solder pins reduce the mechanical strain on the soldering spots
- The latching on the side enables various numbers of positions to be combined

## Commercial data

Item number	1908020
Packing unit	50 pc
Minimum order quantity	1 pc
Product key	AALBAA
GTIN	4017918443078
Weight per piece (including packing)	3.78 g
Weight per piece (excluding packing)	3.28 g
Country of origin	GR

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## Technical data

### Product properties

Product type	Printed circuit board terminal
Product family	FFKDS(A) 1,5/..-H
Product line	COMBICON Terminals S
Type	PC terminal block can be aligned
Number of positions	4
Pitch	3.81 mm
Number of connections	4
Number of rows	1
Number of potentials	4
Pin layout	Linear pinning
Solder pins per potential	2

### Electrical properties

#### Properties

Nominal current $I_N$	12 A
Nominal voltage $U_N$	160 V
Rated voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Rated voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV

### Connection data

#### Connection technology

Type	PC terminal block can be aligned
Nominal cross section	1 mm <sup>2</sup>

#### Conductor connection

Connection method	Push-in spring connection
Conductor cross-section rigid	0.14 mm <sup>2</sup> ... 1 mm <sup>2</sup>
Conductor cross-section flexible	0.14 mm <sup>2</sup> ... 1 mm <sup>2</sup>
Conductor cross-section AWG	26 ... 18
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>
Stripping length	10 mm

### Mounting

Mounting type	Wave soldering
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Pin layout	Linear pinning
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## 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)

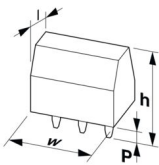
### Material data - housing

Color (Housing)	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

### Material data – actuating element

Color (Actuating element)	orange (2003)
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	3.81 mm
Width [w]	17.74 mm

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Height [h]	16.1 mm
Length [l]	13.65 mm
Installed height	12.7 mm
Solder pin length [P]	3.4 mm
Pin dimensions	0.5 x 1 mm

## PCB design

Pin spacing	5.08 mm
Hole diameter	1.3 mm

## 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 <sup>2</sup> / solid / > 10 N
	0.14 mm <sup>2</sup> / flexible / > 10 N
	1 mm <sup>2</sup> / solid / > 35 N
	1 mm <sup>2</sup> / 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
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV

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minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.5 mm
Rated insulation voltage (II/2)	320 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)	1.6 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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## Drawings

Diagram



Type: FFKDS/H-3,81

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1908020>

 <b>CSA</b> Approval ID: 13631				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B				
Only rigid conductors	150 V	10 A	26 - 18	-

 <b>cULus Recognized</b> Approval ID: E60425-19870330				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B				
	300 V	6 A	26 - 16	-
D				
	300 V	6 A	26 - 16	-

 <b>KEMA-KEUR</b> Approval ID: 2160724.01				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	130 V	-	-	0.14 - 1

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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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