

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Printed circuit board terminal, nominal current: 13.5 A, rated voltage (III/2): 200 V, nominal cross section: 1.5 mm<sup>2</sup>, number of potentials: 13, number of rows: 1, number of positions per row: 13, product range: BC-X9, pitch: 3.81 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

## Commercial data

Item number	5452628
Packing unit	100 pc
Minimum order quantity	100 pc
Note	Made to order (non-returnable)
Sales key	AA12
Product key	AALFPH
GTIN	4046356849531
Weight per piece (including packing)	6.593 g
Weight per piece (excluding packing)	6.593 g
Customs tariff number	85369010
Country of origin	CN

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



## Technical data

### Product properties

Product type	Printed circuit board terminal
Product family	BC-X9
Product line	COMBICON Terminals S
Number of positions	13
Pitch	3.81 mm
Number of connections	13
Number of rows	1
Number of potentials	13
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	13.5 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

Nominal cross section	1.5 mm <sup>2</sup>
-----------------------	---------------------

#### Conductor connection

Connection method	Screw connection with tension sleeve
Conductor cross-section rigid	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	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>
Stripping length	5 mm
Drive form screw head	Slotted (L)
Tightening torque	0.22 Nm ... 0.25 Nm

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



## 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

## 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).
---------------------	--

## Dimensions

Dimensional drawing	
Pitch	3.81 mm
Width [w]	49.53 mm
Height [h]	12 mm
Length [l]	7.3 mm

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



Installed height	8.5 mm
Solder pin length [P]	3.5 mm
Pin dimensions	0.5 x 0.9 mm

PCB design	
Hole diameter	1.1 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
	1.5 mm <sup>2</sup> / solid / > 40 N
	1.5 mm <sup>2</sup> / flexible / > 40 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
---------------	-----------------------

### 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)	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

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



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

## 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
---------------	-----------------------

### 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
-------------------	---------------------

# BC-381X9-13 BK - PCB terminal block

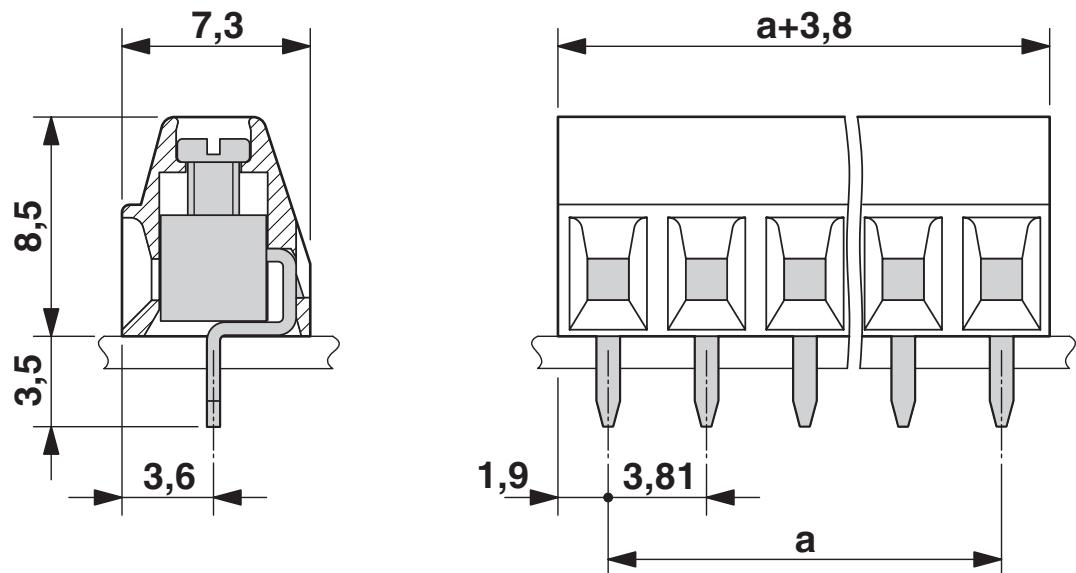
5452628

<https://www.phoenixcontact.com/us/products/5452628>

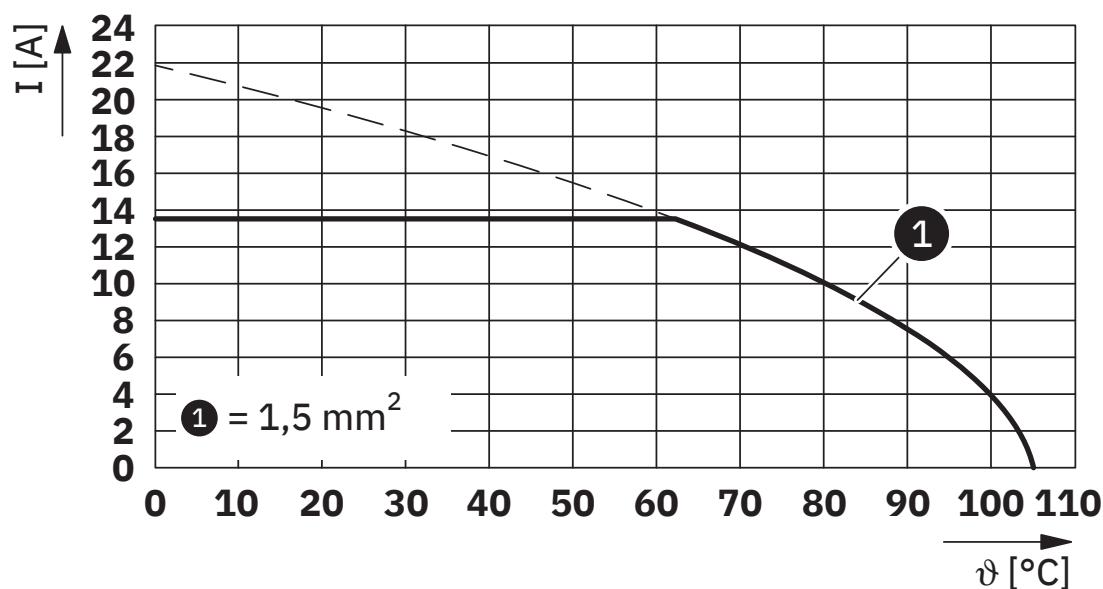


## Drawings

Dimensional drawing



Diagram



Type: BC-381X9-...

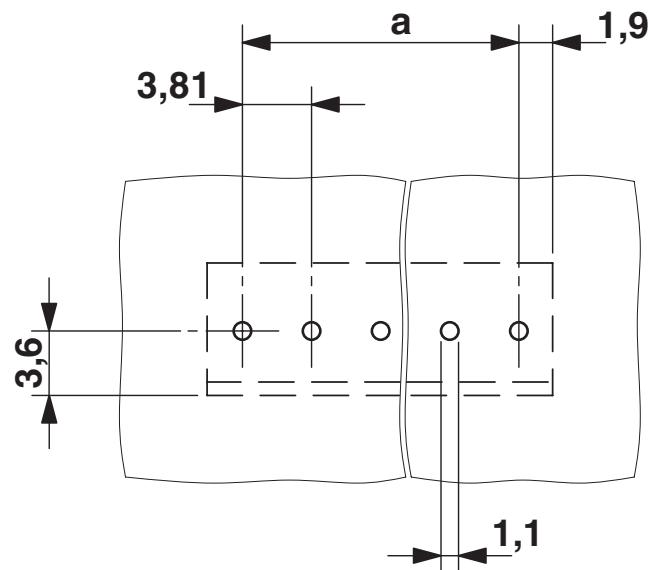
# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



Drilling plan/solder pad geometry



# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



## Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/5452628>

cULus Recognized				
Approval ID: E60425-20071007				
	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: 40042618				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $mm^2$
keine	200 V	17.5 A	-	0.14 - 1.5

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



## Classifications

### ECLASS

ECLASS-13.0	27460101
ECLASS-15.0	27460101

### ETIM

ETIM 9.0	EC002643
----------	----------

### UNSPSC

UNSPSC 21.0	39121400
-------------	----------

# BC-381X9-13 BK - PCB terminal block

5452628

<https://www.phoenixcontact.com/us/products/5452628>



## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c)

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.	

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
-------------------------------------	----------------------

Phoenix Contact 2025 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)