

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

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.



Direct plug-in block, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MCVU 1,5/...-GFD, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, mounting: Direct mounting, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: Screw locking mechanism, mounting: Threaded flange, type of packaging: packed in cardboard

## Your advantages

- Screwable flange for superior mechanical stability
- Laterally mounted flange for screw connection in the housing or on the mounting panel
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

## Commercial data

Item number	1833124
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AA02
Product key	AABMBA
Catalog page	Page 241 (C-1-2013)
GTIN	4017918051815
Weight per piece (including packing)	13.15 g
Weight per piece (excluding packing)	13.15 g
Customs tariff number	85366990
Country of origin	PL

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

## Technical data

### Product properties

Type	Direct mounting
Product line	COMBICON Connectors S
Product type	Direct plug-in block
Product family	MCVU 1,5/..-GFD
Number of positions	12
Pitch	3.81 mm
Number of connections	12
Number of rows	1
Mounting flange	Threaded flange
Number of potentials	12
Solder pins per potential	1

### Electrical properties

Nominal current $I_N$	8 A
Nominal voltage $U_N$	160 V
Degree of pollution	3
Contact resistance	3.5 mΩ
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	Direct mounting
Connector system	COMBICON MC 1,5
Nominal cross section	1.5 mm <sup>2</sup>
Contact connection type	Pin

#### Interlock

Locking type	Screw locking mechanism
Mounting flange	Threaded flange
Tightening torque	0.3 Nm

#### Conductor connection

Connection method	Screw connection with tension sleeve
Connection direction of the conductor to plug-in direction	0 °
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>

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

Conductor cross section AWG	28 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 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> ... 0.75 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.6 mm
Stripping length	7 mm
Tightening torque	0.22 Nm ... 0.25 Nm

## Mounting

Mounting type	Direct mounting
Drive form screw head	Slotted (L)
Drive form screw head	Slotted (L)

## Flange

Tightening torque	0.3 Nm
-------------------	--------

## 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 contact area (top layer)	Tin (5 - 7 µm Sn)
Metal surface contact area (middle layer)	Nickel (2 - 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

## Notes

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

## Notes on operation

In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

## Dimensions

Pitch	3.81 mm
Width [w]	56.11 mm
Height [h]	12.5 mm
Length [l]	20.3 mm

## Mechanical tests

### Conductor connection

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

### Test for conductor damage and slackening

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

### Repeated connection and disconnection

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

### Insertion and withdrawal forces

Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

### Contact holder in insert

Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed

### Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
Result	Test passed

### Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

## Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

## Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	16

### Insulation resistance

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

### 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)	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
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)
Sweep speed	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

### Durability test

# MCVU 1,5/12-GFD-3,81 - Printed-circuit board connector



1833124

<https://www.phoenixcontact.com/us/products/1833124>

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance $R_1$	3.5 m $\Omega$
Contact resistance $R_2$	3.7 m $\Omega$
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 M $\Omega$

## Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	1.39 kV

## Ambient conditions

Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the 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
-------------------	---------------------

Phoenix Contact 2024 © - 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)