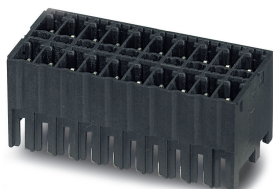


# Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

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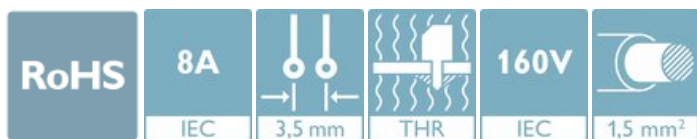


PCB header, nominal cross section: 1.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 20, Number of rows: 2, Number of positions per row: 10, number of connections: 20, product range: MCDNV 1,5/..-G1-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, plug-in system: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: without, mounting: without, type of packaging: packed in cardboard, The pin length is 1.4 mm. User information and design recommendations on Through Hole Reflow Technology can be found at: Downloads".

The figure shows a 10-pos. version with 20 contacts

## Your advantages

- ✔ Designed for integration into the SMT soldering process
- ✔ Vertical connection enables multi-row arrangement on the PCB
- ✔ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✔ Conductor connection on several levels enables higher contact density



## Key Commercial Data

Packing unit	30 pc
Minimum order quantity	30 pc
GTIN	
GTIN	4017918920258

## Technical data

### Item properties

Brief article description	Feed-through header
Connector system	MINI COMBICON
Type of contact	Male connector
Range of articles	MCDNV 1,5/..-G1-THR
Pitch	3.5 mm
Number of positions	10
Mounting type	THR soldering
Pin layout	Linear pinning

# Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

## Technical data

### Item properties

Locking	without
Number of levels	2
Number of connections	20
Number of potentials	20
Pin connector pattern alignment	Standard

### Electrical parameters

Nominal current	8 A
Nom. voltage	160 V
Rated voltage (III/3)	160 V
Rated voltage (III/2)	160 V
Rated voltage (II/2)	250 V
Rated surge voltage (III/3)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (II/2)	2.5 kV

### 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 contact area (top layer)	Tin (3 - 5 µm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)

### Material data - housing

Housing color	black (9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

### Flange specifications

Type of locking	without
Mounting flange	without

### Dimensions for the product

Caption	Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center
Length [ l ]	15.2 mm
Width [ w ]	36.5 mm
Height [ h ]	14.7 mm

# Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

## Technical data

### Dimensions for the product

Pitch	3.5 mm
Height (without solder pin)	13.3 mm
Solder pin [P]	1.4 mm
Pin spacing	8.30 mm
Pin dimensions	0.8 x 0.8 mm

### Dimensions for PCB design

Hole diameter	1.4 mm
Pin spacing	8.30 mm

### Packaging information

Type of packaging	packed in cardboard
Pieces per package	30
Denomination packing units	Pcs.

### General product information

Type of note	Details for soldering processes
Note	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C
Type of note	Details for soldering processes
Note	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C

### Processing notes

Process	Reflow/wave soldering
Specification	Following IPC/JEDEC J-STD-020D.1:2008-03
	Following IEC 61760-1:2006-04
	Following IEC 60068-2-58:2005-02
Moisture Sensitive Level	MSL 1
Classification temperature T <sub>c</sub>	260 °C
Solder cycles in the reflow	3

### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

### Air clearances and creepage distances

Clearances and creepage distances	IEC 60664-1:2007-04
Specification	IEC 60664-1:2007-04
Minimum clearance - inhomogeneous field (III/3)	1.5 mm

# Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

## Technical data

### Air clearances and creepage distances

Minimum clearance - inhomogeneous field (III/2)	1.5 mm
Minimum clearance - inhomogeneous field (II/2)	1.5 mm
Minimum creepage distance value (III/3)	2.5 mm
Minimum creepage distance value (III/2)	1.6 mm
Minimum creepage distance value (II/2)	2.5 mm

### Mechanical tests (A)

Test specification	IEC 61984
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization when inserted requirement >20 N	Test passed
Contact holder in insert requirements >20 N	Test passed

### Durability tests (B)

Specification	IEC 60512-9-1:2010-03
Contact resistance R <sub>1</sub>	1.8 mΩ
Insertion/withdrawal cycles	25
Contact resistance R <sub>2</sub>	1.9 mΩ
Impulse withstand voltage at sea level	2.95 kV

### Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	20
Upper limiting temperature requirements <100 °C	Test passed

### Climatic tests (D)

Specification	ISO 6988:1985-02
Cold stress	-40 °C/2 h
Thermal stress	100 °C/168 h
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Impulse withstand voltage at sea level	2.95 kV
Power-frequency withstand voltage	1.39 kV

### Environmental and durability tests (E)

Specification	IEC 61984:2008-10
Result, degree of protection, IP code	Finger safety with IP20 test finger

### Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)

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## Technical data

### Vibration test

Acceleration	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h

### Standards and Regulations

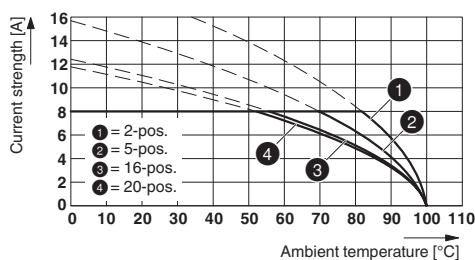
Connection in acc. with standard	EN-VDE
	CUL
Flammability rating according to UL 94	V0

### Environmental Product Compliance

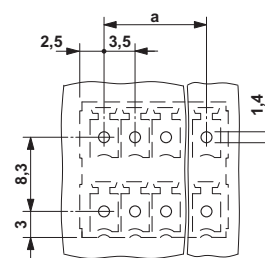
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

Diagram



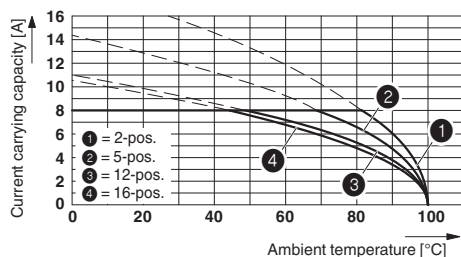
Drilling diagram



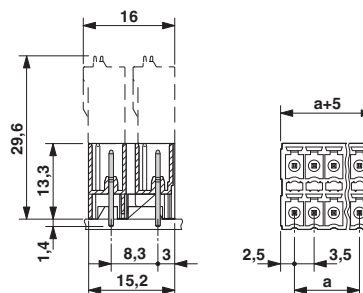
Typ: FMC 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR

\*) ≤ 8-pos. = 1.3 / > 8-pos. = 1.4

Diagram



Dimensional drawing



Typ: FMCD 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR

## Classifications

eCl@ss

eCl@ss 10.0.1	27440402
eCl@ss 11.0	27460201
eCl@ss 4.0	27260700

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## Classifications

### eCl@ss

eCl@ss 4.1	27260700
eCl@ss 5.0	27260700
eCl@ss 5.1	27260700
eCl@ss 6.0	27260700
eCl@ss 7.0	27440402
eCl@ss 9.0	27440402

### ETIM

ETIM 3.0	EC001121
ETIM 4.0	EC002637
ETIM 6.0	EC002637
ETIM 7.0	EC002637

### UNSPSC

UNSPSC 6.01	30211810
UNSPSC 7.0901	39121409
UNSPSC 11	39121409
UNSPSC 12.01	39121409
UNSPSC 13.2	39121409
UNSPSC 18.0	39121409
UNSPSC 19.0	39121409
UNSPSC 20.0	39121409
UNSPSC 21.0	39121409

## Approvals

### Approvals

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#### Approvals

VDE Gutachten mit Fertigungsüberwachung / IECEE CB Scheme / EAC / cULus Recognized

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#### Ex Approvals

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### Approval details

# Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

## Approvals

VDE Gutachten mit Fertigungsüberwachung		<a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/ VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a>	40011723
Nominal voltage UN		160 V	
Nominal current IN		8 A	

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DE1-60987-B1B2
Nominal voltage UN		160 V	
Nominal current IN		8 A	

EAC		B.01687
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cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	E60425-20110128
Nominal voltage UN		B 150 V	D 150 V
Nominal current IN		8 A	8 A

## Accessories

### Accessories

### Coding element

Coding profile - CP-MSTB - 1734634

Coding profile, is inserted into the slot on the plug or inverted header, red insulating material



### Labeled terminal marker

## Printed-circuit board connector - MCDNV 1,5/10-G1-3,5 P14THR - 1953088

### Accessories

Marker card - SK 3,81/2,8:FORTL.ZAHLEN - 0804109

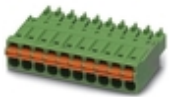


Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 3.81 mm, lettering field size: 3.81 x 2.8 mm

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### Additional products

Printed-circuit board connector - FMC 1,5/10-ST-3,5 - 1952348



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 10, Number of rows: 1, Number of positions per row: 10, number of connections: 10, product range: FMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

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