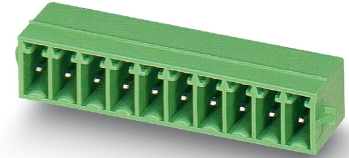


# Data sheet

Item No.: 1731691

Type: MC 1,5/ 4-G-3,5-RN

PCB headers



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 4                   | • Nominal current      | 8 A                 |
| • Nominal cross section | 1.5 mm <sup>2</sup> | • Nominal voltage      | 160 V               |
| • Color                 | green (6021)        | • Connection direction | 0 °                 |
| • Pitch                 | 3.5 mm              | • Type of packaging    | packed in cardboard |
| • Mounting type         | Wave soldering      |                        |                     |

## 2 Your advantages

- ✓ Well-known mounting principle allows worldwide use
- ✓ Intuitive locking mechanism prevents accidental disconnection



Make sure you always use the latest documentation.

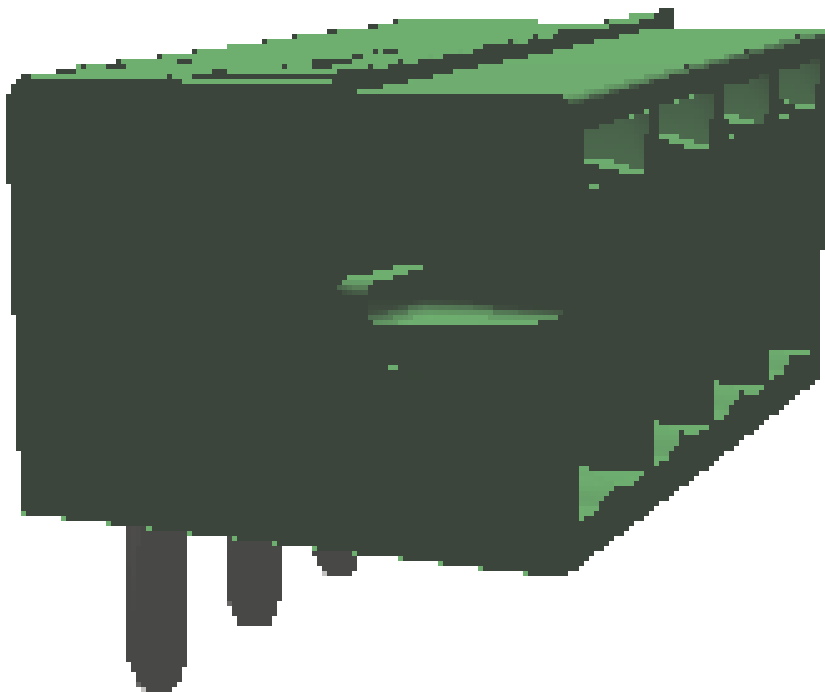
It can be downloaded at: [phoenixcontact.net/product/1731691](https://phoenixcontact.net/product/1731691)

**1731691 MC 1,5/ 4-G-3,5-RN****3 Table of contents**

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1731691 MC 1,5/ 4-G-3,5-RN

4 3D model in PDF can be activated (Acrobat Reader only)



**1731691 MC 1,5/ 4-G-3,5-RN****5 General Technical Data****5.1 item properties**

Item no.	1731691
Type	MC 1,5/ 4-G-3,5-RN
Product line	COMBICON Connectors S
Connector system	COMBICON MC 1,5
Product type	PCB headers
Type of contact	Male connector
Range of articles	MC 1,5/..-G-RN
Pitch	3.5 mm
Number of positions	4
Number of rows	1
Number of connections	4
Number of potentials	4
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

**1731691 MC 1,5/ 4-G-3,5-RN****6 Mounting****6.1 Flange mounting**

Type of locking	Snap-in locking
Mounting flange	Engagement nose

**7 Material properties****7.1 Material of metal parts**

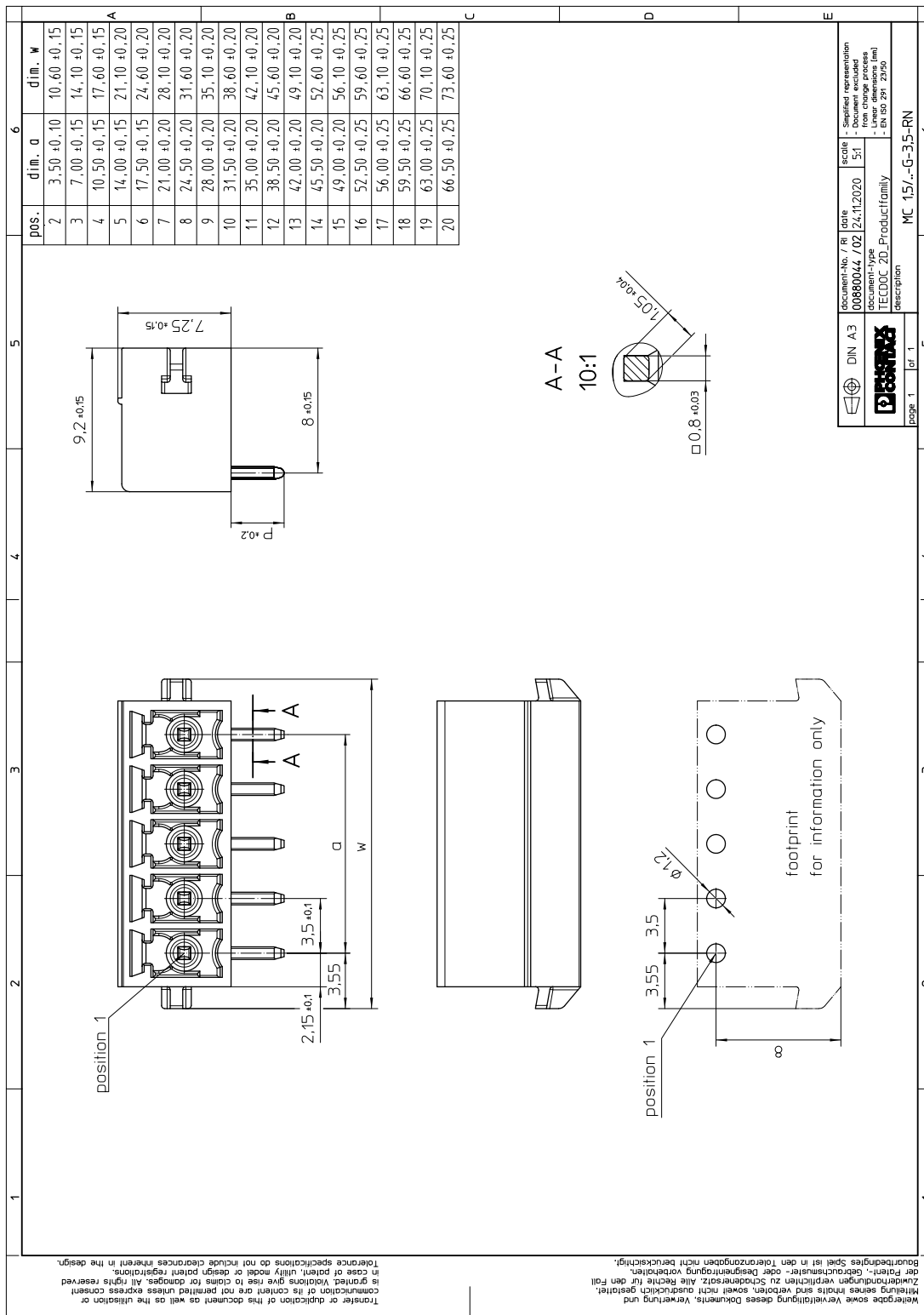
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

**1731691 MC 1,5/ 4-G-3,5-RN****8 Dimensions****8.1 Dimensions for the product**

Length	9.2 mm
Width	17.6 mm
Height (without solder pin)	7.25 mm
Total height	10.65 mm
Solder pin [P]	3.4 mm

1731691 MC 1,5/ 4-G-3,5-RN

9 Series drawing



**1731691 MC 1,5/ 4-G-3,5-RN**

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**10 Application****11 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

**11.1 Temperature limit values**

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 (dependent on the derating curve)

**1731691 MC 1,5/ 4-G-3,5-RN****12 Mechanical tests****12.1 Visual examination**

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

**12.2 Dimensional test**

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

**12.3 Resistance of marking**

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

**12.4 Polarization and coding**

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

**12.5 Contact retention in insert**

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

**1731691 MC 1,5/ 4-G-3,5-RN****13 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	7 N
Withdraw strength per pos. approx.	6 N

**1731691 MC 1,5/ 4-G-3,5-RN****14 Electrical tests**

Rated current / conductor cross section	8 A / 1.5 mm <sup>2</sup>
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	1.6 mΩ
Degree of pollution	2

**1731691 MC 1,5/ 4-G-3,5-RN****15 Air and creepage distances**

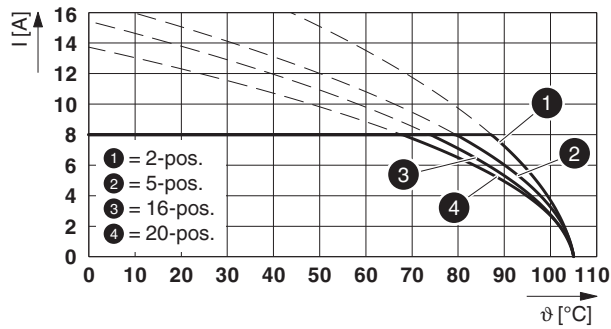
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112)	CTI 225		
Rated insulation voltage	160 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	1.5 mm	1.5 mm	1.5 mm
Minimum value of the creepage path requirement in acc. with table	2.5 mm	1.6 mm	2.5 mm

## 1731691 MC 1,5/ 4-G-3,5-RN

## 16 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Note	For number of positions, see diagram
Reduction factor	0.8
Conductor cross section	1.5 mm <sup>2</sup>

Type: FMC 1,5/...-ST-3,5-RF with MC 1,5/...-G-3,5-RN



**1731691 MC 1,5/ 4-G-3,5-RN****17 Environmental and durability tests****17.1 Vibration test**

Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

**17.2 Insulation resistance**

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





1731691 MC 1,5/ 4-G-3,5-RN

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## 18 Data transmission

## 1731691 MC 1,5/ 4-G-3,5-RN

## 19 Approvals / Certificates

IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	160 V	8 A	-	-
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	300 V	8 A	-	-
<b>Usegroup D</b>				
	300 V	8 A	-	-
VDE report with production monitoring 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	160 V	8 A	-	-

**1731691 MC 1,5/ 4-G-3,5-RN****20 Commercial Data**

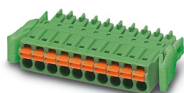
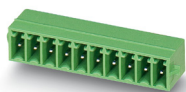
Item no.	1731691
Type	MC 1,5/ 4-G-3,5-RN
Pieces per package	50
Net weight	0.868 g
GTIN	4046356159302
	Information that applies locally, see link on page 1

**21 Accessories**

Description	Item No.	Type
	0804073	SK 3,5/2,8:FORTL.ZAHLEN
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 1.5 mm	1841161	MC 1,5/10-LWL 1,5-3,5
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 2.3 mm	1841187	MC 1,5/10-LWL 2,3-3,5
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 4 mm	1841200	MC 1,5/10-LWL 4-3,5

## 1731691 MC 1,5/ 4-G-3,5-RN

## 22 Combination tests

**MC 1,5/..-G-RN**

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

Polarization when inserted  
Requirement >20 NContact holder in insert  
Requirements >20 N**Durability tests (B)**Contact resistance  $R_1$  1st levelContact resistance  $R_1$  2nd level

Insertion/withdrawal cycles

Contact resistance  $R_2$ Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu\text{s})$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ Insulation resistance  
Requirements > 5 M $\Omega$ **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature  
Requirements < 100°C**Climatic tests (D)**

Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage  
(ISO 6988)Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu\text{s})$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**FMC 1,5/..-ST-RF**

IEC 61984

approx. 7 N / 6 N

Test passed

Test passed

1.6 m $\Omega$ 

25

1.8 m $\Omega$ 

2.95 kV

1.39 kV

> 5 M $\Omega$ 

20

1.5 mm<sup>2</sup>

8 A

Test passed

-40 °C/2 h

105 °C/168 h

0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20  
test finger