

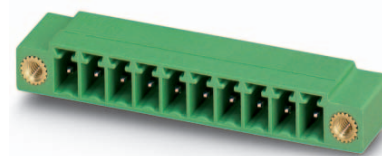
Data sheet

2017-12-19
Product version 08
Document revision 0

Order No.: 1827910

Type: MC 1,5/ 7-GF-3,81

Header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 7 | • Nominal current | 8 A |
| • Nominal cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | green | • Connection direction | 0 ° |
| • Pitch | 3.81 mm | • Type of packaging | packed in cardboard |
| • Mounting type | Wave soldering | | |

2 Your advantages

- ✓ Well-known mounting principle allows worldwide use
- ✓ Screwable flange for superior mechanical stability
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies



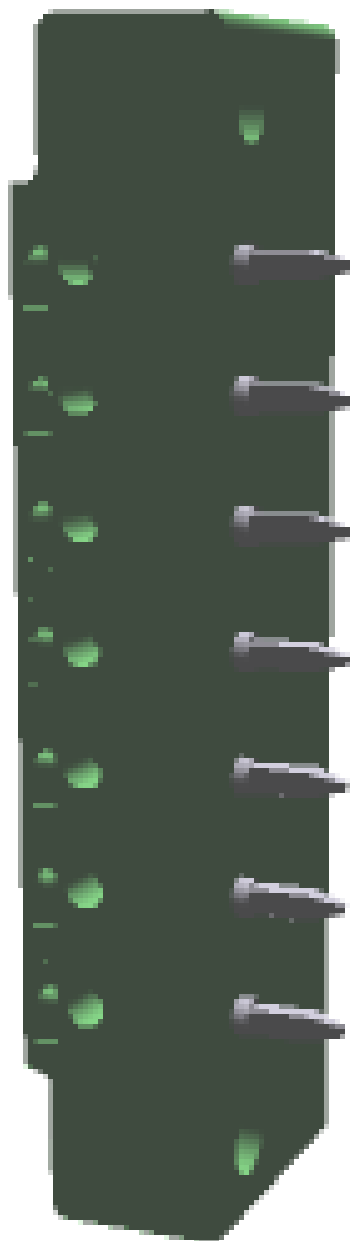
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1827910

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1827910 MC 1,5/ 7-GF-3,81

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



1827910 MC 1,5/ 7-GF-3,81**5 item properties**

Order No.	1827910
Type	MC 1,5/ 7-GF-3,81
Type of contact	Male connector
Range of articles	MC 1,5/..-GF
Pitch	3.81 mm
Number of positions	7
Drive form screw head	Slotted
Locking	Threaded flange
Mounting type	Wave soldering
Pin layout	Linear pinning

5.1 Material data

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	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm	
Soldering area surface	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm	
Surface characteristics	Tin-plated	
Insulating material data	Housing	Housing
Insulating material	PBT	
CTI according to IEC 60112	225	
Flammability rating according to UL 94	V0	
Color	green (6021)	

6 Dimensions**6.1 Dimensions for the product**

Length	9.2 mm
Width	37.06 mm
Height (without solder pin)	6.9 mm
Total height	10.3 mm
Solder pin [P]	3.4 mm
Dimension a	22.86 mm

6.2 Dimensions for PCB design

Hole diameter	1.2 mm
Pin dimensions	0,8 x 0,8

1827910 MC 1,5/ 7-GF-3,81

7 Series drawing

8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	100

9 Application

9.1 Temperature limit values

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

1827910 MC 1,5/ 7-GF-3,81**10 Mechanical tests**

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual test	Test passed
Specification	IEC 60512-1-1:2002-02
Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02
Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12
Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	6 N
Withdraw strength per pos. approx.	4 N
Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N
Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	21 N

1827910 MC 1,5/ 7-GF-3,81**11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	8 A / 1.5 mm ²
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	1.3 mΩ
Degree of pollution	2

11.2 Air and creepage distances

Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	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

1827910 MC 1,5/ 7-GF-3,81**12 Current carrying capacity/derating curves**

Specification

IEC 61984:2008-10

Note

Representation based on IEC 60512-5-2:2002-02

Reduction factor

0.8

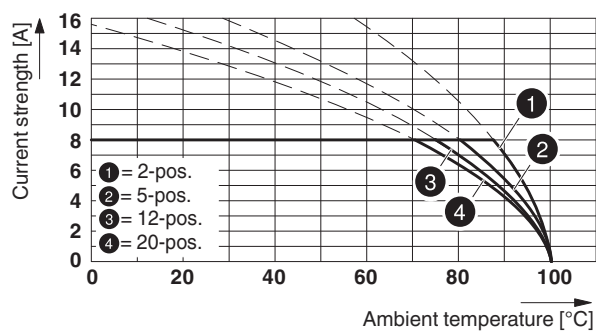
Number of positions

See diagram

Conductor cross section

1.5 mm²

Note

Type: MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81**Type: FRONT-MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81 P...THR**

1827910 MC 1,5/ 7-GF-3,81**13 Environmental and durability tests****13.1 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	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis

14 Classification for connectors

Specification	IEC 61984:2008-10
Main features	Connectors without switching capacity (COC)
Construction form	Fixed connectors
Strain relief elements	without strain relief
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protection class	
Protective conductor	without PE
Lock	no

15 Approvals

CSA 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	8 A	8 A		

VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil				
Voltage	160 V			
Current	8 A			

IECEE CB Scheme 				
mm ² /AWG/kcmil				
Voltage	160 V			
Current	8 A			

CCA				
mm ² /AWG/kcmil				
Voltage	160 V			
Current	8 A			

1827910 MC 1,5/ 7-GF-3,81cULus Recognized 

Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	8 A	8 A		

EAC 

1827910 MC 1,5/ 7-GF-3,81**16 Commercial Data**

Order No.	1827910
Type	MC 1,5/ 7-GF-3,81
Pieces per package	100
Net weight	1.85 g
GTIN	4017918050368
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

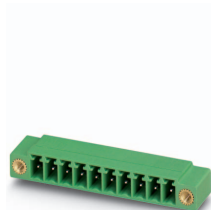
Order No.	Type
1748406	FMC 1,5/ 7-STF-3,81
1827758	MC 1,5/ 7-STF-3,81
1828391	MCVR 1,5/ 7-STF-3,81
1828540	MCVW 1,5/ 7-STF-3,81
1850903	FRONT-MC 1,5/ 7-STF-3,81
1851287	FK-MCP 1,5/ 7-STF-3,81
1852419	MCC 1/ 7-STZF-3,81
1897597	QC 0,5/ 7-STF-3,81

18 Accessories

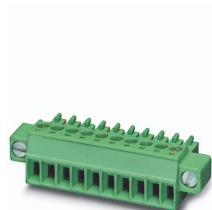
Description	Order No.	Type
	0804109	SK 3,81/2,8:FORTL.ZAHLEN
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	1841174	MC 1,5/10-LWL 1,5-3,81
	1841190	MC 1,5/10-LWL 2,3-3,81
	1841213	MC 1,5/10-LWL 4-3,81

1827910 MC 1,5/ 7-GF-3,81

19 Combination tests



MC 1,5/-GF



MC 1,5/-STF



FRONT-MC 1,5/-STF

Specification	IEC 61984	IEC 61984		
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 6 N / 4 N	approx. 7 N / 5 N		
Polarization when inserted Requirement >20 N	Test passed	Test passed		
Contact holder in insert Requirements >20 N	Test passed	Test passed		
Durability tests (B)				
Contact resistance R_1	1.3 mΩ	1.8 mΩ		
Insertion/withdrawal cycles	25	25		
Contact resistance R_2	1.5 mΩ	1.9 mΩ		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu s)$	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$	1.39 kV	1.39 kV		
Insulation resistance Requirements > 5 MΩ	15 TΩ	> 0.2 TΩ		
Thermal tests (C)				
Tested number of positions	20	20		
Tested conductor cross section	1.5 mm ²	1.5 mm ²		
Test current	8 A DC	8 A		
Upper limiting temperature Requirements < 100°C	Test passed	Test passed		
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h		
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h		
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu s)$	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$	1.39 kV	1.39 kV		
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10	IEC 61984:2008-10		
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger		