2018-04-03
Product version 02
Document revision 0

Data sheet

Order No.: 1842937

Type: MCD 1,5/ 4-G1F-3,81

Header

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

1 Main features

- No. of pos. 4
- Nominal cross section 1.5 mm²
- Color green
- Pitch 3.81 mm
- Mounting type Wave soldering
- Nominal current 8 A
- Nominal voltage 160 V
- Connection direction 0 °
- Type of packaging packed in cardboard

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
- Conductor connection on several levels enables higher contact density

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1842937

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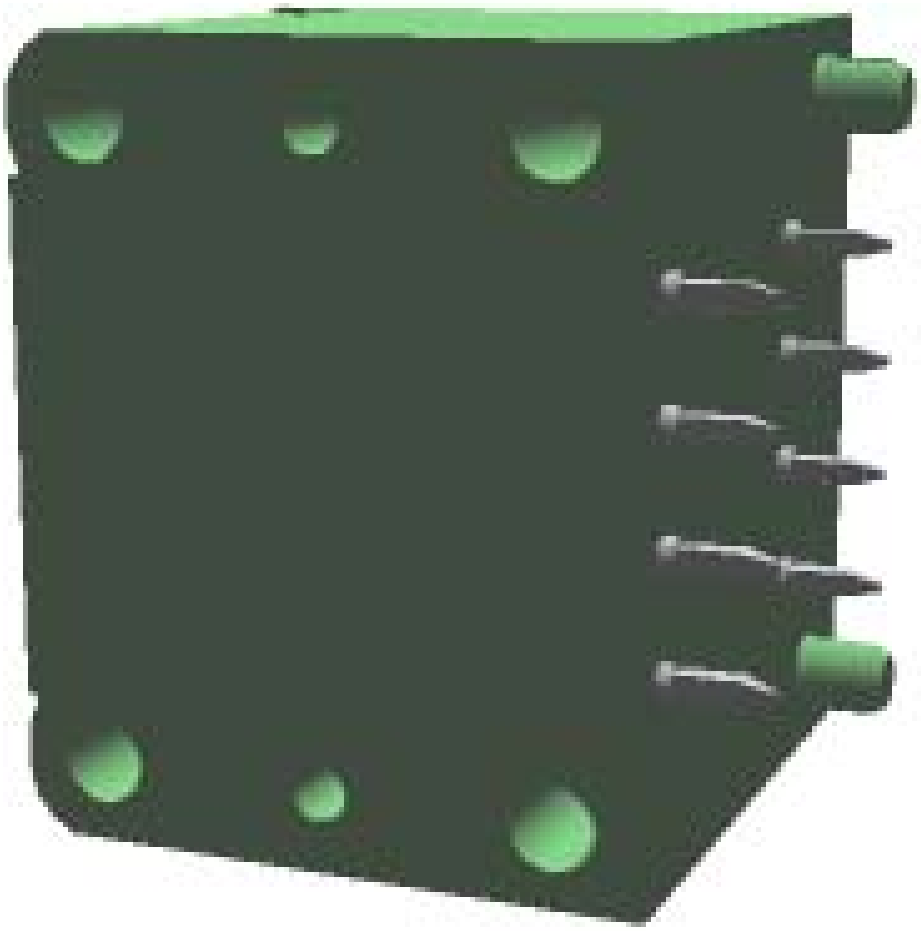
4 3D model in PDF can be activated (Acrobat Reader only)



5 item properties

Order No.	1842937
Type	MCD 1,5/ 4-G1F-3,81
Type of contact	Male connector
Range of articles	MCD 1,5/..-G1F
Pitch	3.81 mm
Number of positions	4
Locking	Threaded flange
Mounting type	Wave soldering
Pin layout	Linear pinning
Product note	In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

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	PA	
CTI according to IEC 60112	600	
Flammability rating according to UL 94	V0	
Color	green (6021)	
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	

6 Dimensions

6.1 Dimensions for the product

Length	21.9 mm
Width	25.63 mm
Height (without solder pin)	22.7 mm
Total height	26.2 mm
Solder pin [P]	3.5 mm
Dimension a	11.43 mm

6.2 Dimensions for PCB design

Hole diameter	1.2 mm
Pin dimensions	0,8 x 0,8
Pin spacing	12.70 mm

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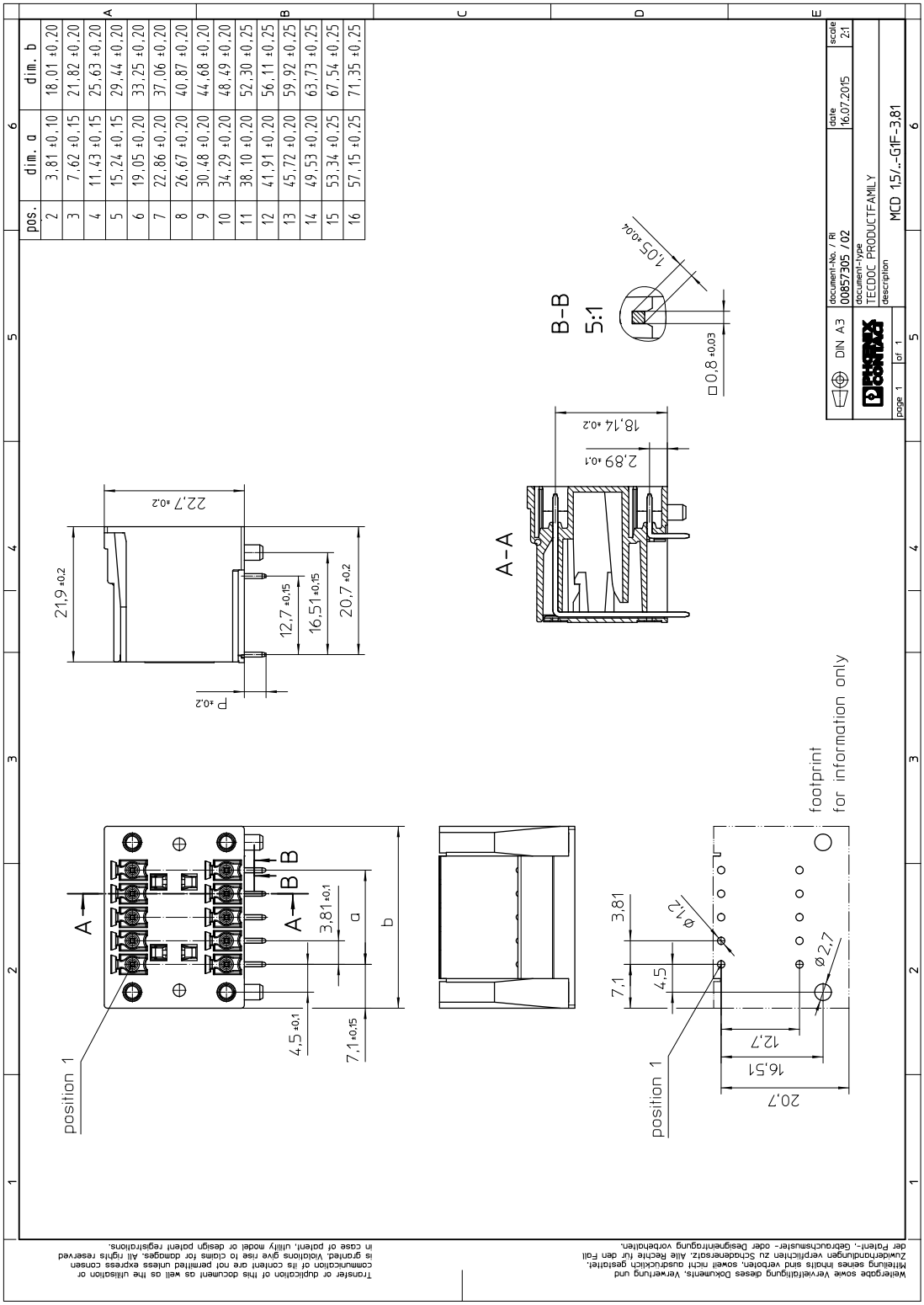
7 Series drawing



8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

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)

10 Mechanical tests

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual examination	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.	8 N
Withdraw strength per pos. approx.	5 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.	28.5 N

11 Electrical tests

11.1 Electrical data

Rated current / conductor cross section	8 A / 1.5 mm²
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	
Degree of pollution	2

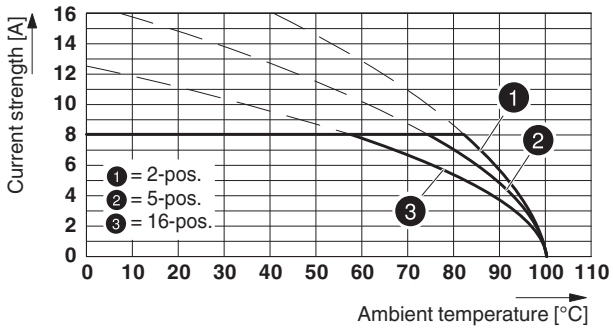
11.2 Air and creepage distances

Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	160 V	160 V	320 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 mm	1.5 mm	1.6 mm

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 MCD 1,5/...-G1F-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		
mm²/AWG/kcmil				
Voltage	300 V	300 V		
Current	8 A	8 A		

VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil				
Voltage	160 V			
Current	8 A			

IECEE CB Scheme				
mm²/AWG/kcmil				
Voltage	160 V			
Current	8 A			

CCA				
mm²/AWG/kcmil				
Voltage	160 V			
Current	8 A			

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cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil				
Voltage	300 V	300 V		
Current	8 A	8 A		

EAC

16 Commercial Data

Order No.	1842937
Type	MCD 1,5/ 4-G1F-3,81
Pieces per package	50
Net weight	7.52 g
GTIN	4017918112134
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

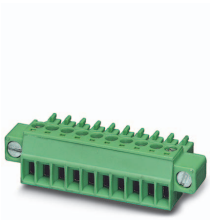
17 corresponding plugs

Order No.	Type
1827729	MC 1,5/ 4-STF-3,81
1828362	MCVR 1,5/ 4-STF-3,81
1828511	MCVW 1,5/ 4-STF-3,81
1850877	FRONT-MC 1,5/ 4-STF-3,81
1851258	FK-MCP 1,5/ 4-STF-3,81
1852383	MCC 1/ 4-STZF-3,81
1897568	QC 0,5/ 4-STF-3,81

18 Accessories

Description	Order No.	Type
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0804109	SK 3,81/2,8:FORTL.ZAHLEN

19 Combination tests



MCD 1,5/..-G1F	MC 1,5/..-STF			
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 8 N / 5 N			
Polarization when inserted Requirement >20 N	Test passed			
Contact holder in insert Requirements >20 N	Test passed			
Durability tests (B)				
Contact resistance R_1 1st level	1.2 mΩ			
Contact resistance R_1 2nd level	2.2 mΩ			
Insertion/withdrawal cycles	25			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV			
Insulation resistance Requirements > 5 MΩ	> 2 TΩ			
Thermal tests (C)				
Tested number of positions	16			
Tested conductor cross section	1.5 mm^2			
Test current	8 A			
Upper limiting temperature Requirements < 100°C	Test passed			
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h			
Test sequence 2: heat storage	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			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV			
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10			
Degree of protection	Finger safety with IP20 test finger			