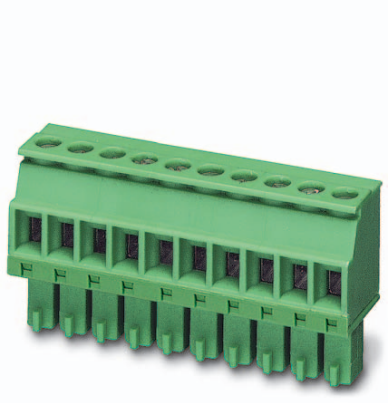
2017-05-18
Product version 04
Document revision 0

Data sheet

Order No.: 1827127

Type: MCVR 1,5/ 2-ST-3,81

Plug component, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features

- Number of positions 2
- Conductor cross section 1.5 mm²
- Color green
- Pitch 3.81 mm
- Connection method Screw connection with tension sleeve
- Nominal current 8 A
- Nominal voltage 160 V
- Connection direction 90 °
- Type of packaging packed in cardboard

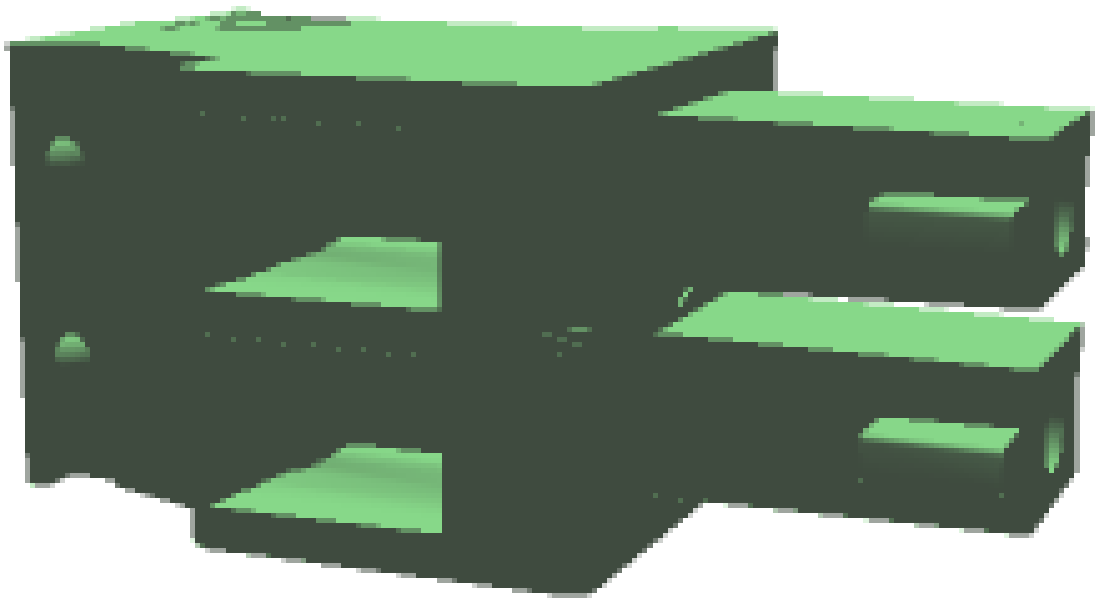
2 Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1827127

3 Table of contents

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



5 item properties

Order No.	1827127
Type	MCVR 1,5/ 2-ST-3,81
Type of contact	Female connector
Range of articles	MCVR 1,5/..-ST
Pitch	3.81 mm
Number of positions	2
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted
Screw thread	M2
Tightening torque	0.22 Nm ... 0.25 Nm
Locking	without

5.1 Connection capacity

Conductor cross section, solid	0.14 mm² to 1.5 mm²
Conductor cross section, flexible	0.14 mm² to 1.5 mm²
Conductor cross section AWG/kcmil	28 to 16
2 conductors with same cross section, solid	0.08 mm² to 0.5 mm²
2 conductors with same cross section, stranded	0.08 mm² to 0.75 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² to 1.5 mm²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm² to 0.5 mm²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm² to 0.34 mm²
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm² to 0.5 mm²
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.6 mm
Stripping length	7 mm

5.2 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
Terminal point surface	Sn 4 µm ... 8 µm
Surface contact area	Sn 4 µm ... 8 µm
Surface characteristics	hot-dip tin-plated

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

6 Dimensions

6.1 Dimensions for the product

1827127 MCVR 1,5/ 2-ST-3,81

Length	19.01 mm
Width	8.41 mm
Total height	10.4 mm
Dimension a	3.81 mm

7 Series drawing

8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	250

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 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.	8 N
Withdraw strength per pos. approx.	6 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 N

10.1 Termination and connection method

Specification	IEC 60999-1:1999-11
Check for damage to conductor or loosening	Test passed

10.2 Pull-out test

Termination and connection method: pull-out test	
Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.14 mm² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm² / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm² / stranded / > 40 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

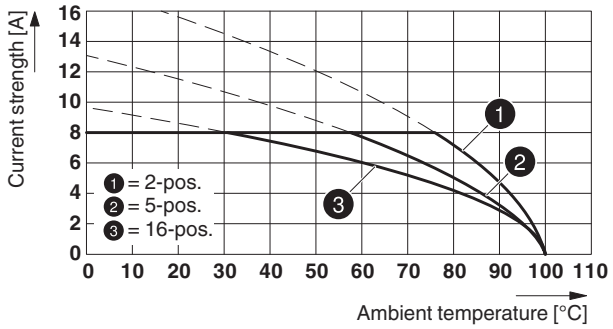
11.2 Air and creepage distances

Component	Plug component		
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
Note on connection cross section	With connected conductor 1.5 mm² (solid).		

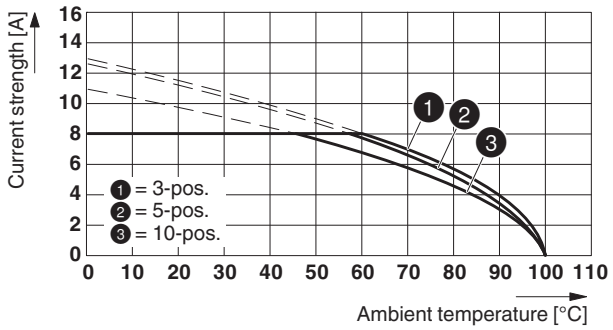
12 Current carrying capacity/derating curves

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

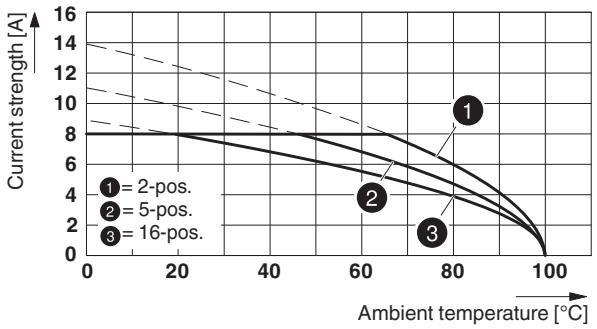
Type: MCV(W/R) 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81



Type: MCVR 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81

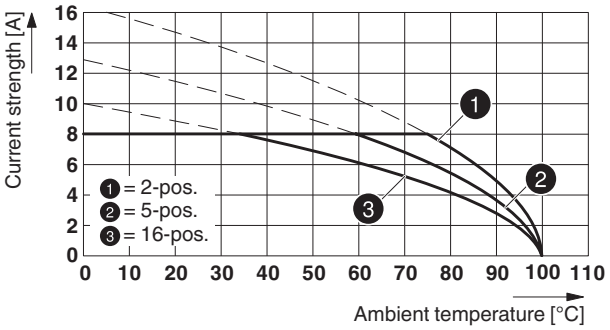


Type: MCVR 1,5/...-ST-3,81 with MCDV 1,5/...-G-3,81



1827127 MCVR 1,5/ 2-ST-3,81

Type: MCV(W/R) 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81



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
Connection method	Can be reconnected
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protective conductor	without PE
Lock	no
Connection method	Screw terminal points

15 Approvals

CSA				
Use group	B	D		
mm²/AWG/kcmil	28-16	28-16		
Voltage	300 V	300 V		
Current	8 A	8 A		

VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			

IECEE CB Scheme				
mm²/AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			

CCA				
mm²/AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			

1827127 MCVR 1,5/ 2-ST-3,81

cULus Recognized				
Use group	B	D		
mm^2/AWG/kcmil	30-14	30-14		
Voltage	300 V	300 V		
Current	8 A	8 A		

EAC

16 Commercial Data

Order No.	1827127
Type	MCVR 1,5/ 2-ST-3,81
Pieces per package	250
Net weight	1.63 g
GTIN	4017918050085
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

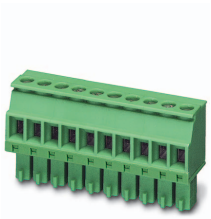
17 corresponding headers

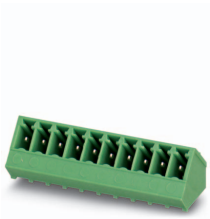
Order No.	Type
1707007	MCV 1,5/ 2-G-3,81 P14 THR
1707421	MCV 1,5/ 2-G-3,81 P26 THR
1713554	MCV 1,5/ 2-G-3,81 P26 THRR32
1782572	MC 1,5/ 2-G-3,81 P20 THRR32
1803277	MC 1,5/ 2-G-3,81
1803426	MCV 1,5/ 2-G-3,81
1827279	SMC 1,5/ 2-G-3,81
1829950	MCD 1,5/ 2-G-3,81
1830402	MCDV 1,5/ 2-G-3,81
1837450	MCVDU 1,5/ 2-G-3,81
1843075	MCD 1,5/ 2-G1-3,81
1847725	MCDV 1,5/ 2-G1-3,81
1860647	EMCV 1,5/ 2-G-3,81
1897801	EMC 1,5/ 2-G-3,81
1908761	MC 1,5/ 2-G-3,81 THT
1943755	MC 1,5/ 2-G-3,81 THT-R56

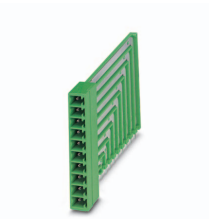
18 Accessories

Description	Order No.	Type
	0804109	SK 3,81/2,8:FORTL.ZAHLEN
Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip	1205037	SZS 0,4X2,5 VDE
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733495	EBPL 2-3,81

19 Combination tests

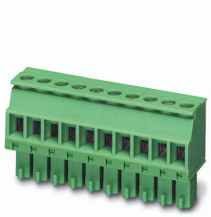


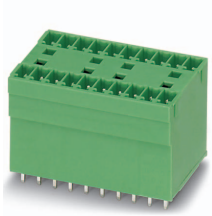




MCVR 1,5/..-ST	**MCD 1,5/..-G1**	**SMC 1,5/..-G**	**MCO 1,5/..-GR**	**MCD 1,5/..-G**
Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 8 N / 6 N		approx. 8 N / 6 N	
Polarization when inserted Requirement > 20 N	Test passed		Test passed	
Contact holder in insert Requirements > 20 N	Test passed		Test passed	
Endurance tests (B)				
Contact resistance R_1 1st level	3.4 mΩ			
Contact resistance R_1 2nd level	4.3 mΩ			
Insertion/withdrawal cycles	25		25	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV		2.95 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV		1.39 kV	
Insulation resistance Requirements > 5 MΩ	> 0.4 TΩ		> 0.2 TΩ	
Thermal tests (C)				
Tested number of positions	16		10	
Tested conductor cross section	1.5 mm^2		1.5 mm^2	
Test current	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 ≥ (1.2/50 µs)	2.95 kV		2.95 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 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	

1827127 MCVR 1,5/ 2-ST-3,81





MCVR 1,5/..-ST	MCDV 1,5/..-G	MCDV 1,5/..-G1	MC 1,5/..-G-THR	MCV 1,5/..-G-THR
Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 7 N / 5 N	approx. 8 N / 6 N		
Polarization when inserted Requirement > 20 N	Test passed	Test passed		
Contact holder in insert Requirements > 20 N	Test passed	Test passed		
Endurance tests (B)				
Contact resistance R_1	4 mΩ	4 mΩ		
Insertion/withdrawal cycles	25	25		
Contact resistance R_2	4.4 mΩ	4.3 mΩ		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV	1.39 kV		
Insulation resistance Requirements > 5 MΩ	10^{11} Ω	> 0.4 TΩ		
Thermal tests (C)				
Tested number of positions	16	16		
Tested conductor cross section	1.5 mm²	1.5 mm²		
Test current	8 A	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 ≥ (1.2/50 µs)	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 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		