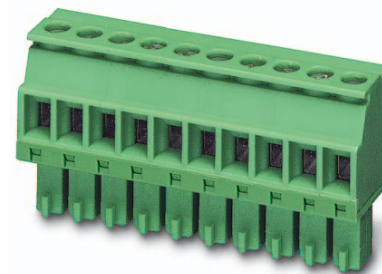


Order No.: 1827237

Type: MCVR 1,5/13-ST-3,81

Plug component, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 13 | • Nominal current | 8 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | green | • Connection direction | 90 ° |
| • Pitch | 3.81 mm | • Type of packaging | packed in cardboard |
| • Connection method | Screw connection with tension sleeve | | |

2 Your advantages

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



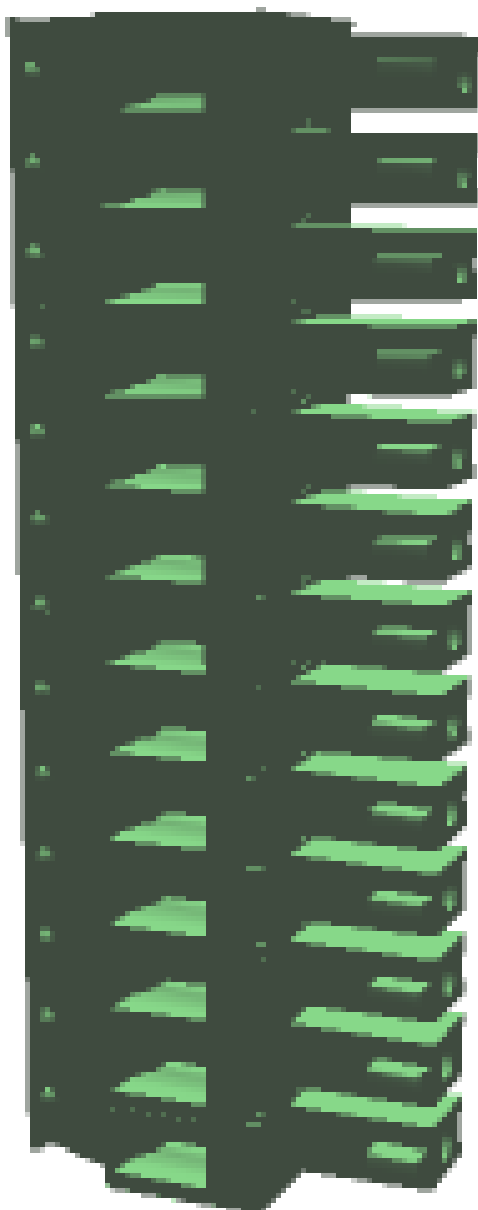
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1827237

3 Table of contents

1	Main features	1
2	Your advantages	1
3	Table of contents	2
4	3D model in PDF can be activated (Acrobat Reader only)	3
5	item properties	4
	5.1 Connection capacity	4
	5.2 Material data	4
6	Dimensions	4
	6.1 Dimensions for the product	4
7	Series drawing	6
8	Packaging information	6
9	Application	6
	9.1 Temperature limit values	6
10	Mechanical tests	7
	10.1 Termination and connection method	7
	10.2 Pull-out test	7
11	Electrical tests	8
	11.1 Electrical data	8
	11.2 Air and creepage distances	8
12	Current carrying capacity/derating curves	9
13	Environmental and durability tests	11
	13.1 Vibration test	11
14	Classification for connectors	11
15	Approvals	11
16	Commercial Data	13
17	corresponding headers	13
18	Accessories	13
19	Combination tests	14

1827237 MCVR 1,5/13-ST-3,81

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



1827237 MCVR 1,5/13-ST-3,81**5 item properties**

Order No.	1827237
Type	MCVR 1,5/13-ST-3,81
Type of contact	Female connector
Range of articles	MCVR 1,5/-ST
Pitch	3.81 mm
Number of positions	13
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 mm ² to 1.5 mm ²
Conductor cross section, flexible	0.14 mm ² to 1.5 mm ²
Conductor cross section AWG/kcmil	28 to 16
2 conductors with same cross section, solid	0.08 mm ² to 0.5 mm ²
2 conductors with same cross section, stranded	0.08 mm ² to 0.75 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² to 1.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² to 0.5 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² to 0.34 mm ²
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm ² to 0.5 mm ²
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	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**

1827237 MCVR 1,5/13-ST-3,81

Length	19.01 mm
Width	50.02 mm
Total height	10.4 mm
Dimension a	45.72 mm

1827237 MCVR 1,5/13-ST-3,81**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)

1827237 MCVR 1,5/13-ST-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.	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 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / stranded / > 40 N

1827237 MCVR 1,5/13-ST-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	
Degree of pollution	2

11.2 Air and creepage distances

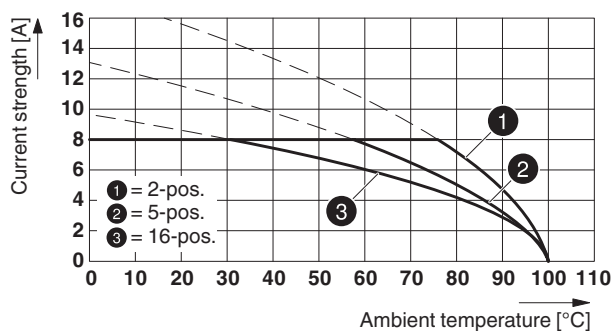
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage 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 mm ² (solid).		

1827237 MCVR 1,5/13-ST-3,81

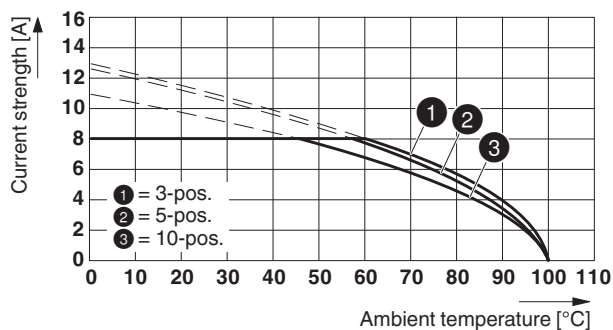
12 Current carrying capacity/derating curves

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 mm ²

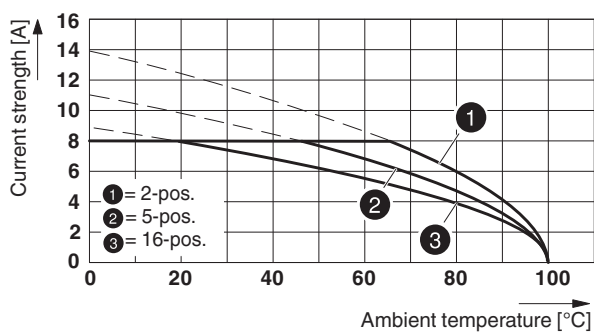
Type: MCV(W/R) 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81

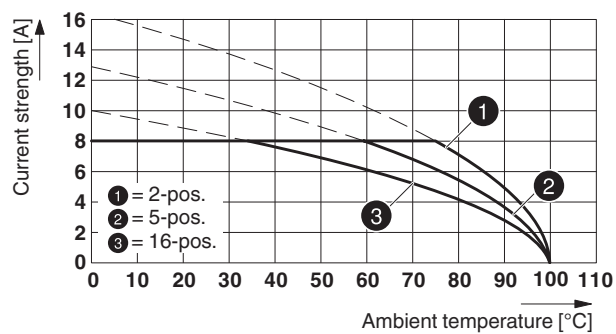


Type: MCVR 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81



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



1827237 MCVR 1,5/13-ST-3,81**Type: MCV(W/R) 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81****Type: MCV(W/R) 1,5/...-STF-3,81 with IMC 1,5/...-ST-3,81**

88457_1000_en

1827237 MCVR 1,5/13-ST-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		
mm ² /AWG/kcmil	28-16	28-16		
Voltage	300 V	300 V		
Current	8 A	8 A		
VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			
IECEE CB Scheme 				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			
CCA				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			

1827237 MCVR 1,5/13-ST-3,81cULus Recognized 

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

EAC 

1827237 MCVR 1,5/13-ST-3,81**16 Commercial Data**

Order No.	1827237
Type	MCVR 1,5/13-ST-3,81
Pieces per package	50
Net weight	10.166 g
GTIN	4017918100025
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding headers

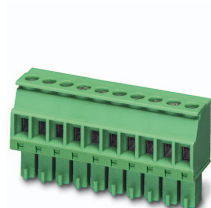
Order No.	Type
1803387	MC 1,5/13-G-3,81
1803536	MCV 1,5/13-G-3,81
1827389	SMC 1,5/13-G-3,81
1830062	MCD 1,5/13-G-3,81
1830512	MCDV 1,5/13-G-3,81
1837544	MCVDU 1,5/13-G-3,81
1843185	MCD 1,5/13-G1-3,81
1847848	MCDV 1,5/13-G1-3,81
1860757	EMCV 1,5/13-G-3,81
1897911	EMC 1,5/13-G-3,81

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
	0805056	SK 3,81/2,8:SO
	0803883	SK U/2,8 WH:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733495	EBPL 2-3,81
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733505	EBPL 3-3,81
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733518	EBPL 4-3,81

1827237 MCVR 1,5/13-ST-3,81

19 Combination tests

**MCVR 1,5/...-ST**

Specification

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

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

Tested number of positions

Tested conductor cross section

Test current

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

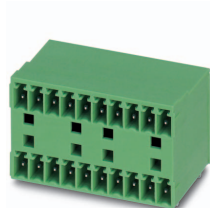
Test sequence 1: low temperature storage

Test sequence 2: heat storage

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

Specification

Degree of protection

**MCD 1,5/...-G1**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

3.4 m Ω 4.3 m Ω

25

2.95 kV

1.39 kV

> 0.4 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

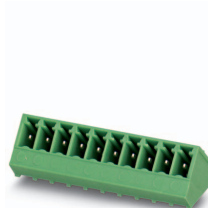
100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**SMC 1,5/...-G**

IEC 61984

**MCO 1,5/...-GR**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

25

2.95 kV

1.39 kV

> 0.2 T Ω

10

1.5 mm²

Test passed

Test passed

-40 °C/2 h

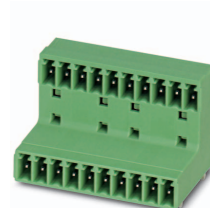
100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MCD 1,5/...-G**

IEC 61984

1827237 MCVR 1,5/13-ST-3,81**MCVR 1,5/...-ST**

Specification

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

Insertion/withdrawal cycles

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

Specification

Degree of protection

**MCDV 1,5/...-G**

IEC 61984

approx. 7 N / 5 N

Test passed

Test passed

4 m Ω

25

4.4 m Ω

2.95 kV

1.39 kV

10¹¹ Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

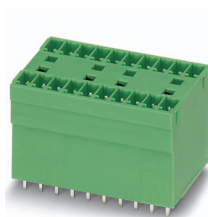
100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MCDV 1,5/...-G1**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

4 m Ω

25

4.3 m Ω

2.95 kV

1.39 kV

> 0.4 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MC 1,5/...-G-THR**

IEC 61984

**MCV 1,5/...-G-THR**

IEC 61984

1827237 MCVR 1,5/13-ST-3,81**MCVR 1,5/...-ST**

Specification

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

Insertion/withdrawal cycles

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

Specification

Degree of protection

**IMC 1,5/...-ST**

IEC 61984

approx. 7 N / 3 N

Test passed

Test passed

4 m Ω

25

4.1 m Ω

2.95 kV

1.39 kV

> 0.2 T Ω

16

1.5 mm²

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger