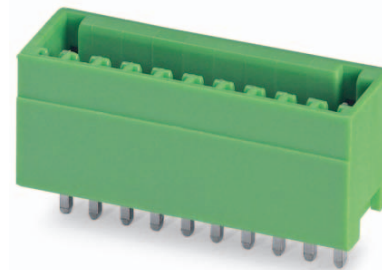


Data sheet

Order No.: 1881639

Type: MCV 0,5/10-G-2,5

Header



1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 10 | • Nominal current | 4 A |
| • Nominal cross section | 0.5 mm ² | • Nominal voltage | 160 V |
| • Color | green | • Connection direction | 90 ° |
| • Pitch | 2.5 mm | • Type of packaging | packed in cardboard |
| • Mounting type | Wave soldering | | |

2 Your advantages

- ✓ Well-known mounting principle allows worldwide use
- ✓ Vertical connection enables multi-row arrangement on the PCB



Make sure you always use the latest documentation.

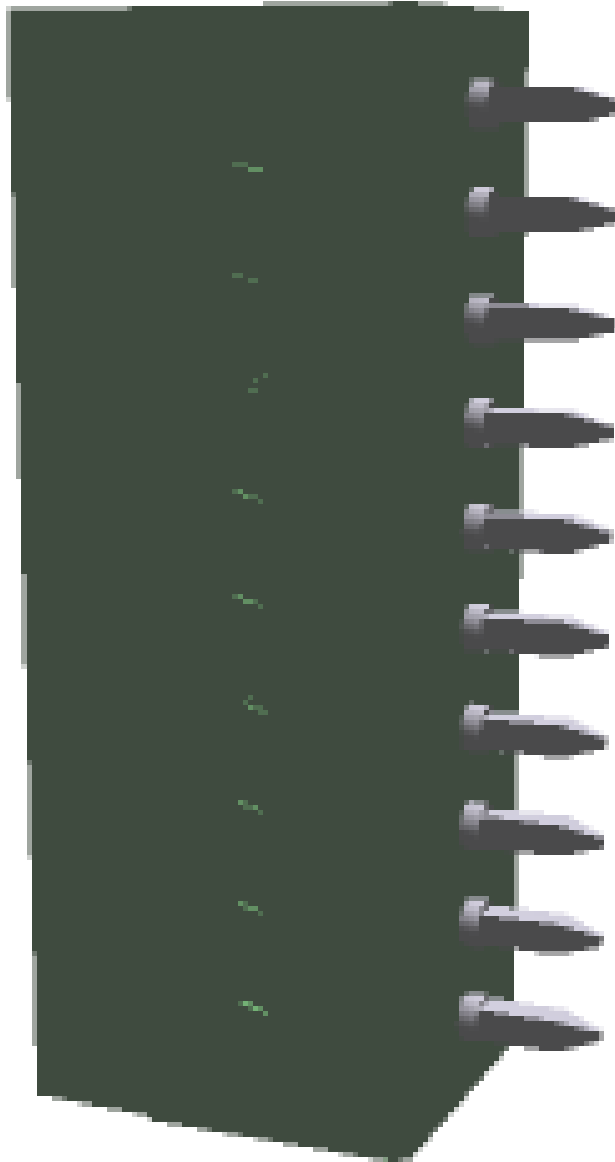
It can be downloaded at: phoenixcontact.net/product/1881639

1881639 MCV 0,5/10-G-2,5**3 Table of contents**

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1881639 MCV 0,5/10-G-2,5

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



1881639 MCV 0,5/10-G-2,5**5 item properties**

Order No.	1881639
Type	MCV 0,5/10-G-2,5
Type of contact	Male connector
Range of articles	MCV 0,5/...-G
Pitch	2.5 mm
Number of positions	10
Locking	without
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	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**

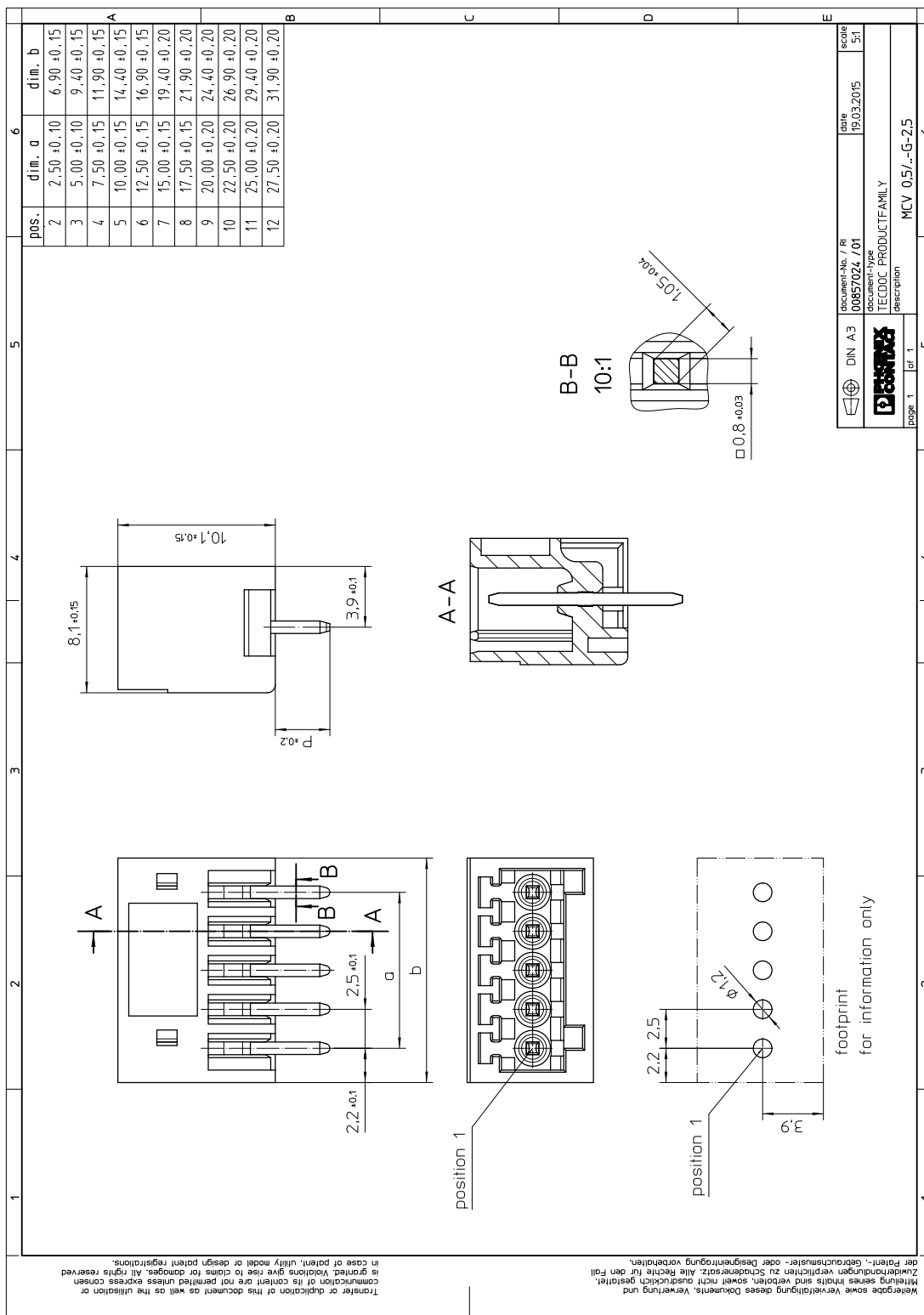
Length	8.1 mm
Width	27.2 mm
Height (without solder pin)	10.1 mm
Total height	13.6 mm
Solder pin [P]	3.5 mm
Dimension a	22.5 mm

6.2 Dimensions for PCB design

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

1881639 MCV 0,5/10-G-2,5

7 Series drawing



1881639 MCV 0,5/10-G-2,5**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)

1881639 MCV 0,5/10-G-2,5**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.	7 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.	26 N

1881639 MCV 0,5/10-G-2,5**11 Electrical tests****11.1 Electrical data**

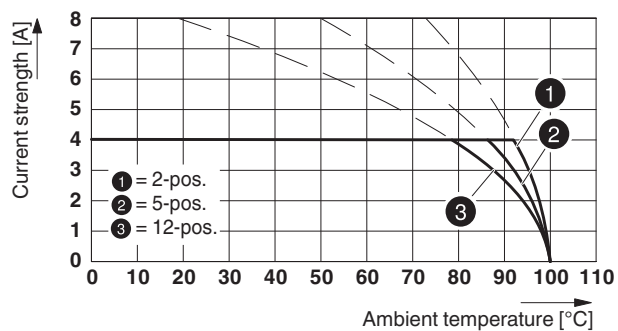
Rated current / conductor cross section	4 A / 0.5 mm ²
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	2 mΩ
Degree of pollution	2

11.2 Air and creepage distances

Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	80 V	160 V	320 V
Rated surge voltage	1.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	0.8 mm	1.5 mm	1.5 mm
Minimum value of the creepage path requirement in acc. with table	1.7 mm	0.8 mm	1.6 mm

1881639 MCV 0,5/10-G-2,5**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	0.5 mm ²
Note	

Type: FK-MC 0,5/...-ST-2,5 with MCV 0,5/...-G-2,5

1881639 MCV 0,5/10-G-2,5**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**VDE Gutachten mit Fertigungsüberwachung **

mm ² /AWG/kcmil				
Voltage	80 V			
Current	4 A			

IECEE CB Scheme 

mm ² /AWG/kcmil				
Voltage	80 V			
Current	4 A			

CCA

mm ² /AWG/kcmil				
Voltage	80 V			
Current	4 A			

EAC **cULus Recognized **

Use group	B			
mm ² /AWG/kcmil				
Voltage	125 V			
Current	4 A			

1881639 MCV 0,5/10-G-2,5**16 Commercial Data**

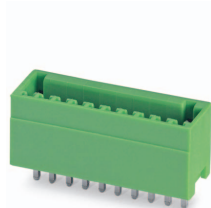
Order No.	1881639
Type	MCV 0,5/10-G-2,5
Pieces per package	50
Net weight	1.837 g
GTIN	4017918156879
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

Order No.	Type
1881406	FK-MC 0,5/10-ST-2,5

18 Accessories

Description	Order No.	Type
Coding profile, is inserted into the groove in the header, red insulating material	1881435	CP-MC 0,5
	0804853	SK 2,54/2,8:FORTL.ZAHLEN

1881639 MCV 0,5/10-G-2,5**19 Combination tests****MCV 0,5/..-G**

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)**

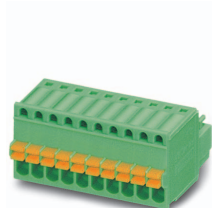
Test sequence 1: low temperature storage

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

**FK-MC 0,5/..-ST**

IEC 61984

approx. 7 N / 6 N

Test passed

Test passed

2 m Ω

25

2.2 m Ω

2.95 kV

1.39 kV

0.1 T Ω

12

0.5 mm²

4 A DC

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



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