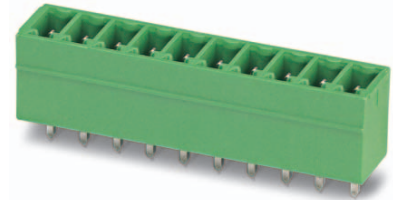


Order No.: 1843703

Type: MCV 1,5/12-G-3,5

Header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 12 | • Nominal current | 8 A |
| • Nominal cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | green | • Connection direction | 90 ° |
| • Pitch | 3.5 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
- ✓ 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/1843703

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1843703 MCV 1,5/12-G-3,5

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



1843703 MCV 1,5/12-G-3,5**5 item properties**

Order No.	1843703
Type	MCV 1,5/12-G-3,5
Type of contact	Male connector
Range of articles	MCV 1,5/...-G
Pitch	3.5 mm
Number of positions	12
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	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**

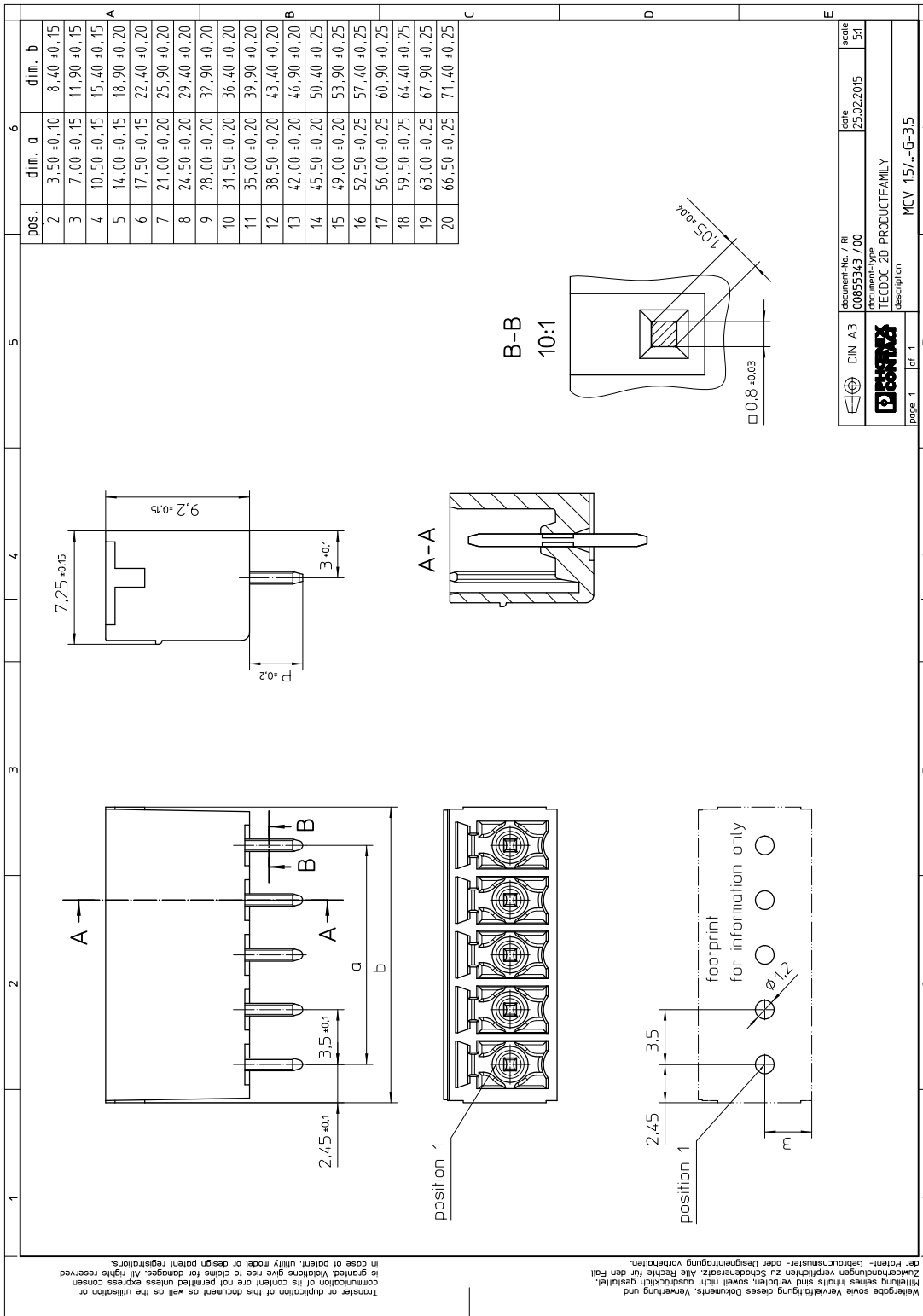
Length	7.25 mm
Width	43.4 mm
Height (without solder pin)	9.2 mm
Total height	12.6 mm
Solder pin [P]	3.4 mm
Dimension a	38.5 mm

6.2 Dimensions for PCB design

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

1843703 MCV 1,5/12-G-3,5

7 Series drawing



1843703 MCV 1,5/12-G-3,5**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)

1843703 MCV 1,5/12-G-3,5**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.	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.	20 N

1843703 MCV 1,5/12-G-3,5**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	1.8 mΩ
Degree of pollution	2

11.2 Air and creepage distances

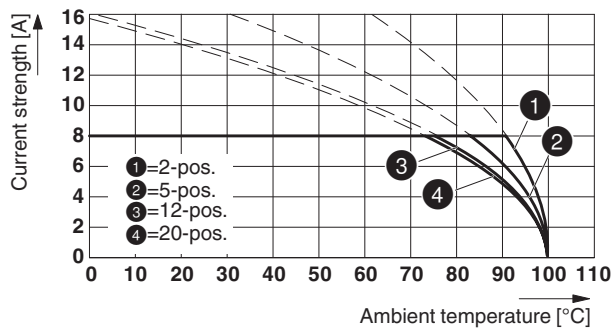
Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 225		
Rated insulation voltage	160 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	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

1843703 MCV 1,5/12-G-3,5

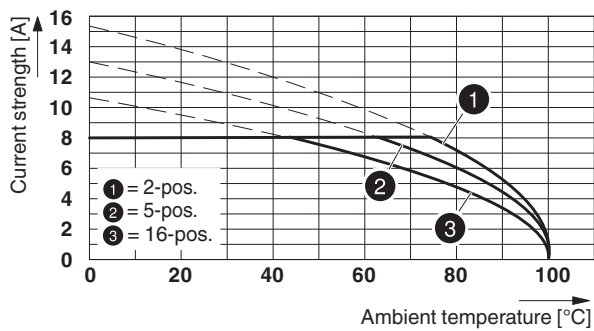
12 Current carrying capacity/derating curves

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	1.5 mm ²
Note	

Type: MC 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5



Type: MCVW 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5




1843703 MCV 1,5/12-G-3,5**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


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			

1843703 MCV 1,5/12-G-3,5

cULus Recognized 

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

EAC 

1843703 MCV 1,5/12-G-3,5**16 Commercial Data**

Order No.	1843703
Type	MCV 1,5/12-G-3,5
Pieces per package	50
Net weight	3.1 g
GTIN	4017918112851
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

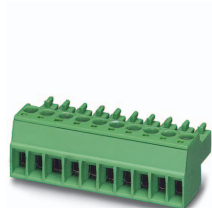
Order No.	Type
1840463	MC 1,5/12-ST-3,5
1862959	MCVW 1,5/12-ST-3,5
1863259	MCVR 1,5/12-ST-3,5
1940004	FK-MCP 1,5/12-ST-3,5
1952364	FMC 1,5/12-ST-3,5

18 Accessories

Description	Order No.	Type
	0803883	SK U/2,8 WH:UNBEDRUCKT
	0804073	SK 3,5/2,8:FORTL.ZAHLEN
	0805030	SK 3,5/2,8:SO
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB

1843703 MCV 1,5/12-G-3,5

19 Combination tests

**MCV 1,5/..-G****MC 1,5/..-ST****MCVW 1,5/..-ST****Mechanical tests (A)**

Insertion/withdrawal force per position	approx. 6 N / 4 N	approx. 6 N / 4 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	1.8 m Ω	3.5 m Ω		
Insertion/withdrawal cycles	25	25		
Contact resistance R_2	2.2 m Ω	3.7 m Ω		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu\text{s})$	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 M Ω	54 T Ω	45 T Ω		

Thermal tests (C)

Tested number of positions	20	16		
Tested conductor cross section	1.5 mm ²	1.5 mm ²		
Test current	8 A DC	8 A DC		
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 $\geq (1.2/50 \mu\text{s})$	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		