

Order No.: 1012277

Type: MCC 0,5/12-ST-2,54

PCB connector, Crimp connection



The figure shows a 10-position version of the product

## 1 Main features



- |                           |                      |                        |                     |
|---------------------------|----------------------|------------------------|---------------------|
| • No. of pos.             | 12                   | • Nominal current      | 6 A                 |
| • Conductor cross section | 0.75 mm <sup>2</sup> | • Nominal voltage      | 160 V               |
| • Color                   | black                | • Connection direction | 0 °                 |
| • Pitch                   | 2.54 mm              | • Type of packaging    | packed in cardboard |
| • Connection method       | Crimp connection     |                        |                     |

## 2 Your advantages

- ✓ Cost-effective connection of crimped conductors in large quantities
- ✓ Gold-plated contacts ensure transfer quality remains stable over the long term
- ✓ Small component size for applications where space is at a premium
- ✓ Tools for manual and automatic crimping available as an option



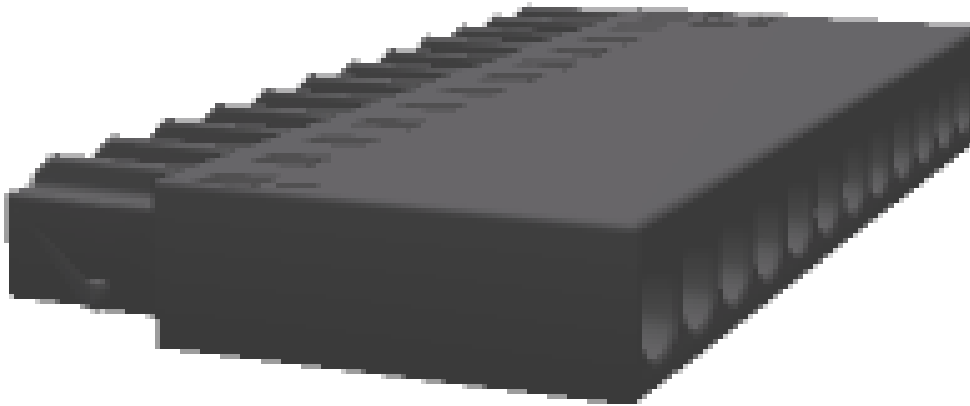
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It can be downloaded at: [phoenixcontact.net/product/1012277](https://phoenixcontact.net/product/1012277)

### 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 Connection capacity AWG .....	4
6	Dimensions.....	5
	6.1 Dimensions for the product .....	5
7	Series drawing.....	6
8	Packaging information .....	7
9	Application.....	7
	9.1 Temperature limit values .....	7
10	Mechanical tests.....	8
	10.1 Termination and connection method.....	8
11	Electrical tests .....	9
	11.1 Electrical data .....	9
	11.2 Air and creepage distances .....	9
12	Current carrying capacity/derating curves .....	10
13	Environmental and durability tests .....	11
	13.1 Vibration test .....	11
14	Approvals .....	11
15	Commercial Data.....	12
16	corresponding headers.....	12
17	Accessories.....	12
18	Combination tests.....	13

1012277 MCC 0,5/12-ST-2,54

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



**1012277 MCC 0,5/12-ST-2,54****5 item properties**

Order No.	1012277
Type	MCC 0,5/12-ST-2,54
Plug-in system	MICRO COMBICON - FMC 0,5
Product type	PCB connector
Type of contact	Female connector
Range of articles	MCC 0,5/...-ST
Pitch	2.54 mm
Number of positions	12
Connection method	Crimp connection
Type of locking	without
	without
Number of levels	1
Number of contacts / solder pins per potential	1

**5.1 Connection capacity**

Conductor cross section, flexible	0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> (Maximum external diameter of the insulation 1.9 mm)
Stripping length	4.1 mm ... 4.5 mm
Tightening torque	

**5.2 Connection capacity AWG**

Conductor cross section AWG	26 ... 18 (Maximum external diameter of the insulation 1.9 mm)
<b>Insulating material data</b>	<b>Housing</b>
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Color	black (9005)
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

**1012277 MCC 0,5/12-ST-2,54**

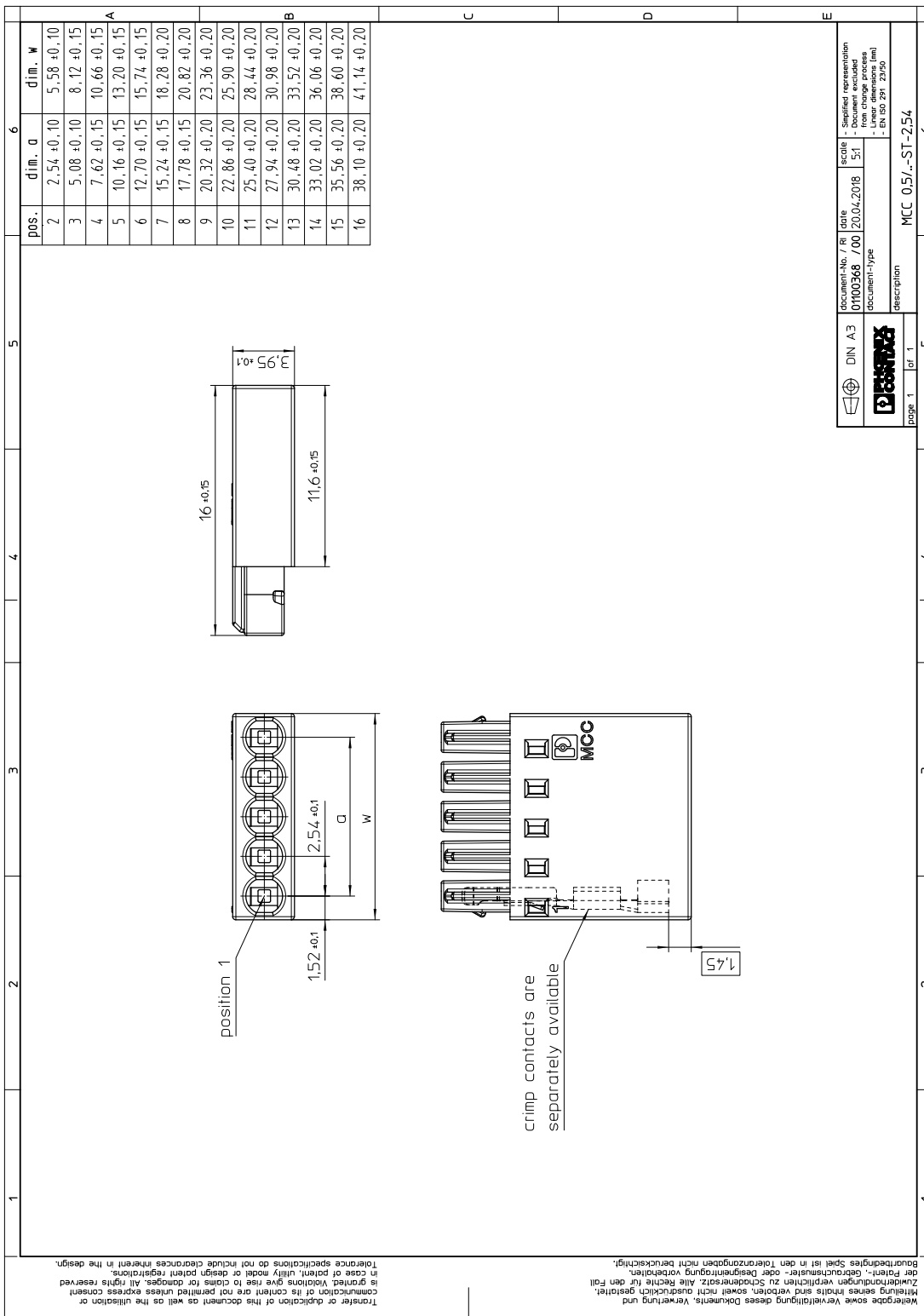
## 6 Dimensions

### 6.1 Dimensions for the product

Length	16 mm
Width	30.98 mm
Total height	3.95 mm
Dimension a	27.94 mm
Coplanarity	

1012277 MCC 0,5/12-ST-2,54

7 Series drawing



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DIN A3  
page 1 of 1  
MCC 0,5/12-ST-2,54

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document-type  
description

scale  
S1

scale - Simplified representation  
- Reduced representation  
- Free choice process  
- Linear dimensions (mm)  
- EN ISO 291 - 2950

**1012277 MCC 0,5/12-ST-2,54**

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**8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	100

**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)

**1012277 MCC 0,5/12-ST-2,54****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	100
Insertion strength per pos. approx.	2 N
Withdraw strength per pos. approx.	3 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

**10.1 Termination and connection method**



**1012277 MCC 0,5/12-ST-2,54****11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	6 A / 0.75 mm <sup>2</sup>
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	2.1 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

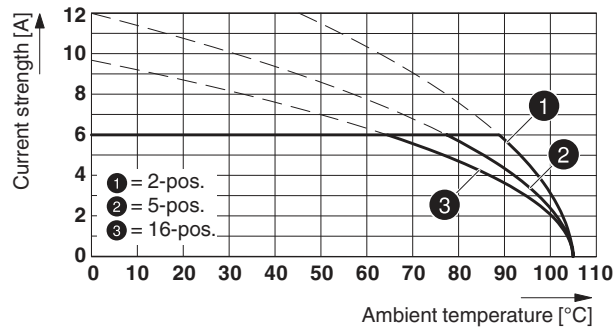
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage 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	0.8 mm	1.6 mm

## 1012277 MCC 0,5/12-ST-2,54

## 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	

Type: MCC 0,5/...-ST-2,54 with MC 0,5/...-G-2,54 P20 THR R...




Insulation resistance	
Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 12 TΩ

**1012277 MCC 0,5/12-ST-2,54****13 Environmental and durability tests****13.1 Vibration test**

Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 500 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5g (60.1 - 500 Hz)
Test duration per axis	2 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

**14 Approvals**

cULus Recognized 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil	26-18	26-18		
Voltage	150 V	150 V		
Current	6 A	6 A		

**1012277 MCC 0,5/12-ST-2,54****15 Commercial Data**

Order No.	1012277
Type	MCC 0,5/12-ST-2,54
Pieces per package	100
Net weight	2.22 g
GTIN	4055626489407
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**16 corresponding headers**

Order No.	Type
1821342	MC 0,5/12-G-2,54 P20 THR R56
1821494	MCV 0,5/12-G-2,54 P20 THR R56
1821795	MC 0,5/12-G-2,54 SMD R56
1821643	MCV 0,5/12-G-2,54 SMD R56

**17 Accessories**

Description	Order No.	Type
	1013425	MCC 0,5-MP AU 0,14-0,5
	1013420	MCC 0,5-MP AU 0,14-0,5 R
	1013419	MCC 0,5-MP AU 0,34-0,75
	1013418	MCC 0,5-MP AU 0,34-0,75 R
Crimping pliers, for COMBICON crimp connectors with cross section: 0.14 ... 0.75 mm <sup>2</sup> . Unlockable pressure lock, precise parallel crimping, front entry, B crimp, incl. 2 positioning aids	1064998	CRIMPFOX-P CC 0.75 L

## 1012277 MCC 0,5/12-ST-2,54

## 18 Combination tests

**MCC 0,5/...-ST**

IEC 61984

**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  $\geq (50/60 \text{ Hz})$ **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

**MC 0,5/...-G-THR**

IEC 61984

approx. 2 N / 3 N

Test passed

Test passed

2.1 m $\Omega$ 

100

2.1 m $\Omega$ 

2.95 kV

1.39 kV

16

0.75 mm<sup>2</sup>

6 A

Test passed

-55 °C/2 h

105 °C/168 h

1.0 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Back of hand safety with  
IP10 access probe