

# MCC 0,5/13-ST-2,54 - PCB connector

1012278

<https://www.phoenixcontact.com/us/products/1012278>

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The figure shows a 10-position version of the product

PCB connector, nominal cross section: 0.75 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Au, contact connection type: Socket, number of potentials: 13, number of rows: 1, number of positions: 13, number of connections: 13, product range: MCC 0,5/...-ST, pitch: 2.54 mm, connection method: Crimp connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON FMC 0,5, locking: without, mounting method: without, type of packaging: packed in cardboard

## 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

## Commercial data

Item number	1012278
Packing unit	100 pc
Minimum order quantity	100 pc
Sales key	AA01
Product key	AAACAA
GTIN	4055626488073
Weight per piece (including packing)	1.581 g
Weight per piece (excluding packing)	1.5 g
Customs tariff number	85366990
Country of origin	DE

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## Technical data

### Product properties

Product type	PCB connector
Product family	MCC 0,5/...-ST
Product line	COMBICON Connectors XS
Number of positions	13
Pitch	2.54 mm
Number of connections	13
Number of rows	1
Number of potentials	13

### Electrical properties

#### Properties

Nominal current $I_N$	6 A
Nominal voltage $U_N$	160 V
Contact resistance	2.1 m $\Omega$
Rated voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Rated voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV
Note on change in voltage	With a cable cross-section of AWG 18 or 0.75 mm <sup>2</sup> , the rated insulation voltage is reduced to 63 V with a rated surge voltage of 1.5 kV and a pollution degree of 1 or 2, depending on the insulation thickness of the cable used.

### Connection data

#### Connection technology

Type	Standard
Connector system	COMBICON FMC 0,5
Nominal cross section	0.75 mm <sup>2</sup>
Contact connection type	Socket

#### Interlock

Locking type	without
Mounting type	without

#### Conductor connection

Connection method	Crimp connection
Conductor/PCB connection direction	0 °
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)

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Conductor cross-section AWG	26 ... 18 (Maximum external diameter of the insulation 1.9 mm)
Stripping length	4.1 mm ... 4.5 mm

## Material specifications

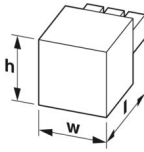
### Material data - contact

Metal surface contact area (top layer)	Gold (Au)
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### Material data - housing

Color (Housing)	black (9005)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
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

## Dimensions

Dimensional drawing	
Pitch	2.54 mm
Width [w]	33.52 mm
Height [h]	3.95 mm
Length [l]	16 mm

## Notes

Note on the contact	The information on the basic material and the finish properties of the crimp contacts is to be found in the E-Shop in the technical data for the respective crimp contact.
Note on application	All laboratory tests are performed in combination with the crimp contacts specified as accessories.
Note on application	The current depends on the crimp contact and conductor cross-section used.
Note on application	The corresponding crimp contacts are to be found in the "Accessories" tab.
Note on application	The crimp contacts may only be processed with approved crimping tools.
Note on the contact	These connectors conform to DIN EN 61984, connectors without switching power (COC). When used for their intended purpose, they must not be plugged in or disconnected live or under load.

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Note on change in voltage	With a cable cross-section of AWG 18 or 0.75 mm <sup>2</sup> , the rated insulation voltage is reduced to 63 V with a rated surge voltage of 1.5 kV and a pollution degree of 1 or 2, depending on the insulation thickness of the cable used.
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## Mechanical tests

### Tensile strength of crimp connections

Result	Test passed
Conductor cross-section/conductor type/tractive force setpoint/actual value	0.14 mm <sup>2</sup> / flexible / > 18 N

### Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	100
Insertion strength per pos. approx.	2 N
Withdraw strength per pos. approx.	3 N

### Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
Result	Test passed

### Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

### Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

### Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

## Environmental and real-life conditions

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R <sub>1</sub>	2.1 mΩ
Contact resistance R <sub>2</sub>	2.1 mΩ
Insertion/withdrawal cycles	100
Insulation resistance, neighboring positions	> 5 MΩ

### Climatic test

Specification	DIN 50018:2013-05
Corrosive stress	1.0 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Thermal stress	105 °C/168 h

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Power-frequency withstand voltage	1.39 kV
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## Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 500 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 Hz ... 60.1 Hz)
Acceleration	5g (60.1 Hz ... 500 Hz)
Test duration per axis	2 h
Test directions	X-, Y- and Z-axis

## Shocks

Specification	IEC 60068-2-27:2008-02
Pulse shape	Semi-sinusoidal
Acceleration	30g
Shock duration	18 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

## Railway application: Oscillation/broadband noise

Specification	DIN EN 50155 (VDE 0115-200):2018-05 IEC 61373:2010-05
Spectrum	Long life test category 1, class B, body mounted
Frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 150 \text{ Hz}$
ASD level	0.964 (m/s <sup>2</sup> )/Hz
Acceleration	0.572 g
Test duration per axis	5 h
Test directions	X-, Y- and Z-axis
Contact interruption	< 1 $\mu\text{s}$
Result	Test passed

## Railway application: Shocks

Specification	DIN EN 50155 (VDE 0115-200):2018-05 IEC 61373:2010-05
Pulse shape	Semi-sinusoidal
Acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)
Contact interruption	< 1 $\mu\text{s}$
Result	Test passed

## Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 105 °C (dependent on the derating curve)

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## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	16

### Insulation resistance

Specification	IEC 60512-3-1:2002-02
Insulation resistance, neighboring positions	> 5 MΩ

### Air clearances and creepage distances |

Specification	IEC 60664-1:2007-04
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm
minimum creepage distance (III/3)	2 mm
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	0.8 mm
Rated insulation voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	1.5 mm
minimum creepage distance (II/2)	1.6 mm

## Packaging specifications

Type of packaging	packed in cardboard
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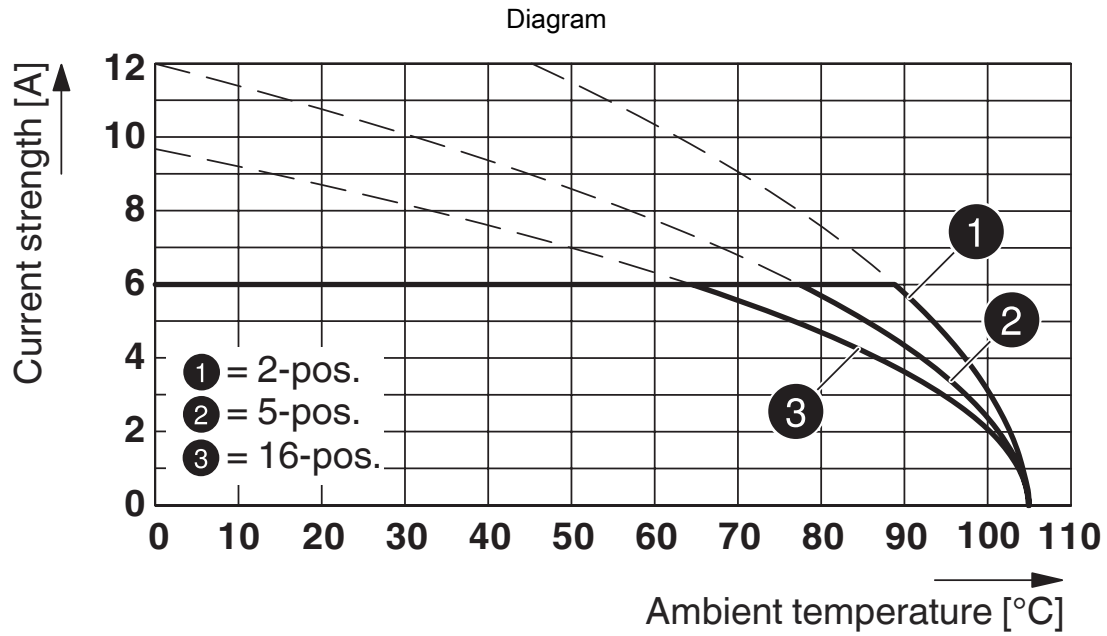
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## Drawings



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

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1012278>

 <b>cULus Recognized</b> Approval ID: E60425-20110128				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B	150 V	6 A	26 - 18	-
D	150 V	6 A	26 - 18	-

 <b>VDE Gutachten mit Fertigungsüberwachung</b> Approval ID: 40042258				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine	160 V	6 A	-	0.14 - 0.75

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## Classifications

### ECLASS

ECLASS-13.0	27460202
ECLASS-15.0	27460202

### ETIM

ETIM 10.0	EC002638
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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