

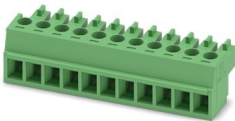
# MC 1,5/11-ST-3,81 - PCB connector

1803662

<https://www.phoenixcontact.com/us/products/1803662>



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PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 11, number of rows: 1, number of positions: 11, number of connections: 11, product range: MC 1,5/..-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

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

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1803662             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 50 pc               |
| Sales key                            | AA02                |
| Product key                          | AABABA              |
| Catalog page                         | Page 190 (C-1-2013) |
| GTIN                                 | 4017918045975       |
| Weight per piece (including packing) | 8.176 g             |
| Weight per piece (excluding packing) | 7.788 g             |
| Customs tariff number                | 85366990            |
| Country of origin                    | US                  |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Type                  | Standard              |
| Product line          | COMBICON Connectors S |
| Product type          | PCB connector         |
| Product family        | MC 1,5/...-ST         |
| Number of positions   | 11                    |
| Pitch                 | 3.81 mm               |
| Number of connections | 11                    |
| Number of rows        | 1                     |
| Mounting flange       | without               |
| Number of potentials  | 11                    |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 8 A    |
| Nominal voltage $U_N$       | 160 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 1.3 mΩ |
| 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 |

### Connection data

#### Connection technology

|                         |                     |
|-------------------------|---------------------|
| Type                    | Standard            |
| Connector system        | COMBICON MC 1,5     |
| Nominal cross section   | 1.5 mm <sup>2</sup> |
| Contact connection type | Socket              |

#### Interlock

|                 |         |
|-----------------|---------|
| Locking type    | without |
| Mounting flange | without |

#### Conductor connection

|                                                                |                                              |
|----------------------------------------------------------------|----------------------------------------------|
| Connection method                                              | Screw connection with tension sleeve         |
| Conductor/PCB connection direction                             | 0 °                                          |
| Conductor cross section rigid                                  | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section flexible                               | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG                                    | 28 ... 16                                    |
| Conductor cross section flexible, with ferrule without plastic | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |

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|                                                                                           |                          |
|-------------------------------------------------------------------------------------------|--------------------------|
| sleeve                                                                                    |                          |
| Conductor cross section, flexible, with ferrule, with plastic sleeve                      | 0.25 mm² ... 0.75 mm²    |
| 2 conductors with same cross section, solid                                               | 0.08 mm² ... 0.5 mm²     |
| 2 conductors with same cross section, flexible                                            | 0.08 mm² ... 0.75 mm²    |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve       | 0.25 mm² ... 0.34 mm²    |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm² ... 0.5 mm²      |
| Cylindrical gauge a x b / diameter                                                        | 2.4 mm x 1.5 mm / 1.6 mm |
| Stripping length                                                                          | 7 mm                     |
| Tightening torque                                                                         | 0.22 Nm ... 0.25 Nm      |

## Specifications for ferrules without insulating collar

|                           |                    |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

## Specifications for ferrules with insulating collar

|                           |                    |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

## Material specifications

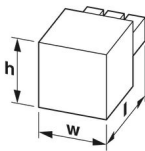
### Material data - contact

|                                          |                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                         | Cu alloy                                                                         |
| Surface characteristics                  | hot-dip tin-plated                                                               |
| Metal surface terminal point (top layer) | Tin (4 - 8 µm Sn)                                                                |
| Metal surface contact area (top layer)   | Tin (4 - 8 µm Sn)                                                                |

### Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| Color (Housing)                                                   | green (6021) |
| 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               | 3.81 mm                                                                              |

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|            |         |
|------------|---------|
| Width [w]  | 42.7 mm |
| Height [h] | 11.1 mm |
| Length [l] | 16.1 mm |

## Mounting

|                       |                                      |
|-----------------------|--------------------------------------|
| Drive form screw head | Slotted (L)                          |
| Connection method     | Screw connection with tension sleeve |
| Drive form screw head | Slotted (L)                          |

## Mechanical tests

### Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Pull-out test

|                                                                             |                                         |
|-----------------------------------------------------------------------------|-----------------------------------------|
| Specification                                                               | IEC 60999-1:1999-11                     |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.14 mm <sup>2</sup> / solid / > 7 N    |
|                                                                             | 0.14 mm <sup>2</sup> / flexible / > 7 N |
|                                                                             | 1.5 mm <sup>2</sup> / solid / > 40 N    |
|                                                                             | 1.5 mm <sup>2</sup> / flexible / > 40 N |

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 6 N         |
| Withdraw strength per pos. approx.  | 4 N         |

### Torque test

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
|---------------|---------------------|

### 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

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## Vibration test

|                        |                             |
|------------------------|-----------------------------|
| Specification          | IEC 60068-2-6:2007-12       |
| Frequency              | 10 - 150 - 10 Hz            |
| Sweep speed            | 1 octave/min                |
| Amplitude              | 0.35 mm (10 Hz ... 60.1 Hz) |
| Sweep speed            | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |

## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance R <sub>1</sub>            | 1.3 mΩ                |
| Contact resistance R <sub>2</sub>            | 1.5 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

## Climatic test

|                                   |                                                                           |
|-----------------------------------|---------------------------------------------------------------------------|
| Specification                     | ISO 6988:1985-02                                                          |
| Corrosive stress                  | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle |
| Thermal stress                    | 100 °C/168 h                                                              |
| Power-frequency withstand voltage | 1.39 kV                                                                   |

## Ambient conditions

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

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 20                    |

### 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                |

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|                                                        |                                                       |
|--------------------------------------------------------|-------------------------------------------------------|
| Note on connection cross section                       | With connected conductor 1.5 mm <sup>2</sup> (solid). |
| 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)                      | 1.5 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 |
|-------------------|---------------------|

# MC 1,5/11-ST-3,81 - PCB connector

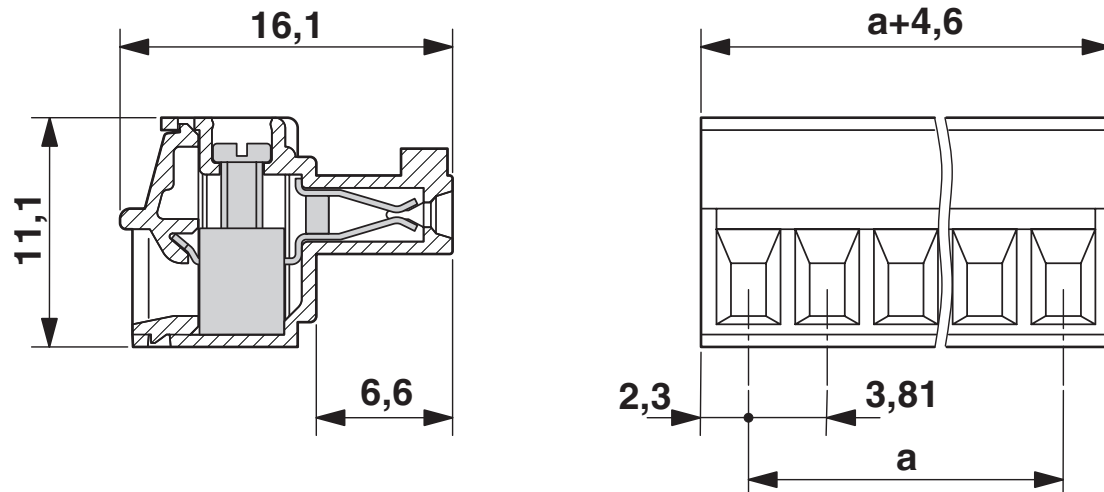
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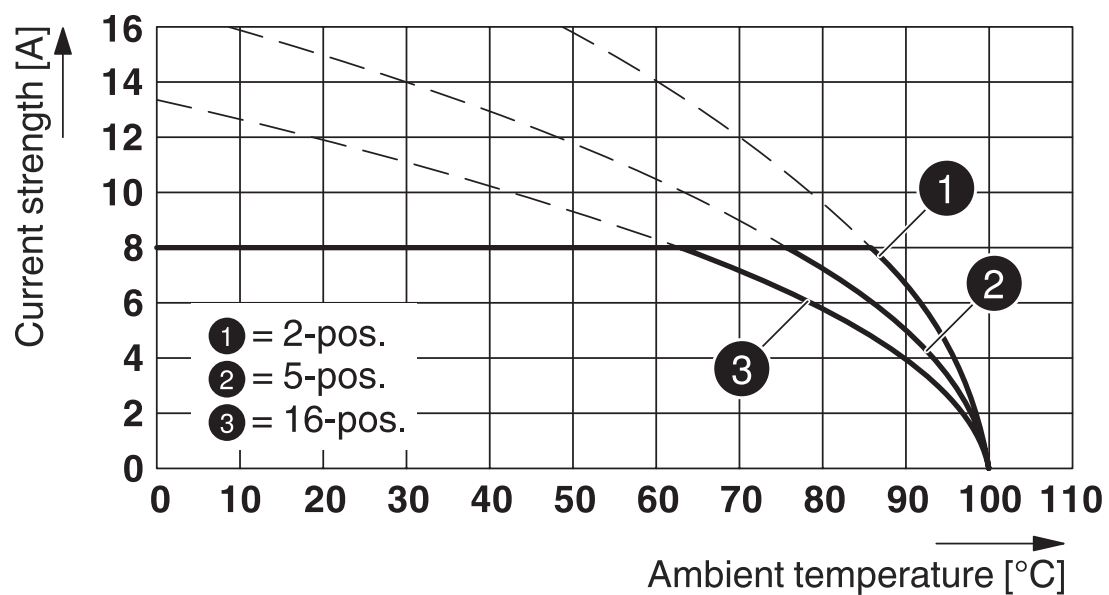


## Drawings

Dimensional drawing



Diagram



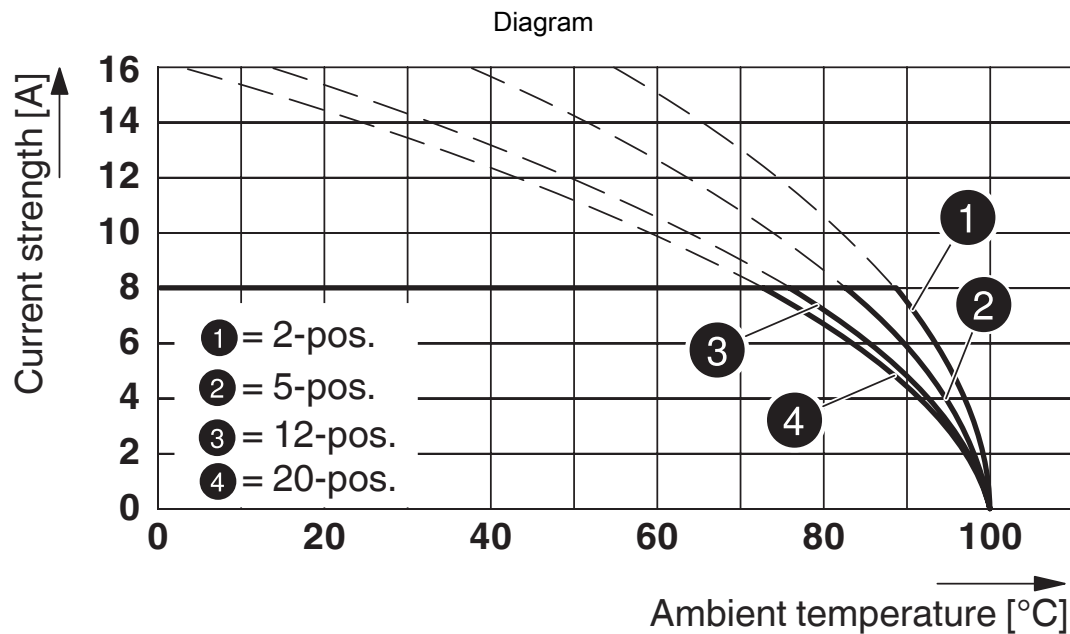
Type: MC 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81

# MC 1,5/11-ST-3,81 - PCB connector

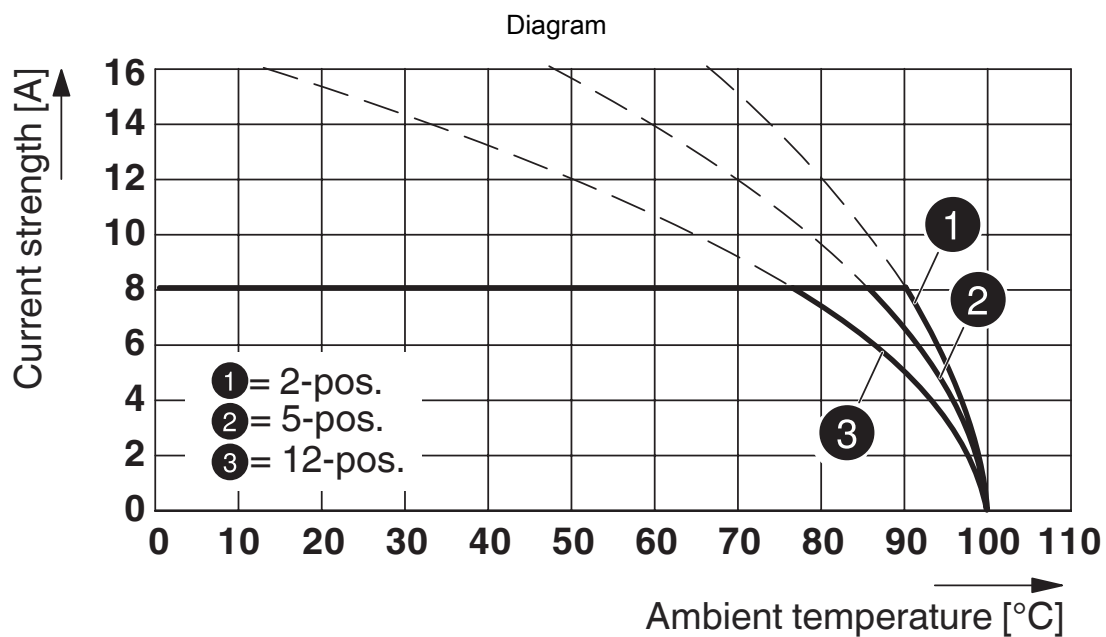


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Type: MC 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81



Type: MC 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81 P26 THR

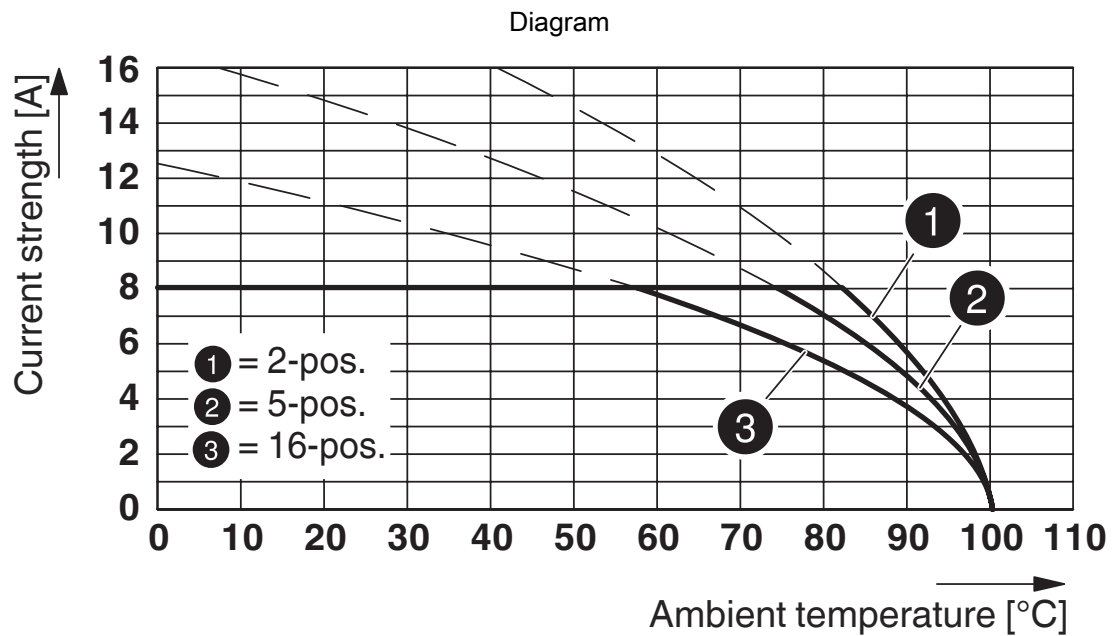


# MC 1,5/11-ST-3,81 - PCB connector

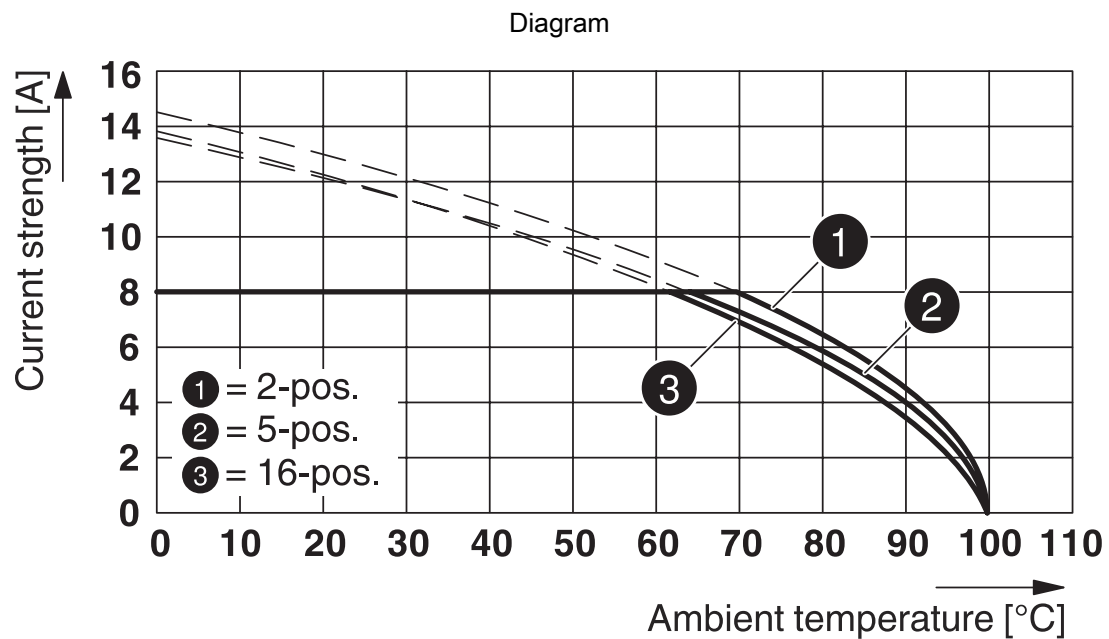


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Type: MC 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81

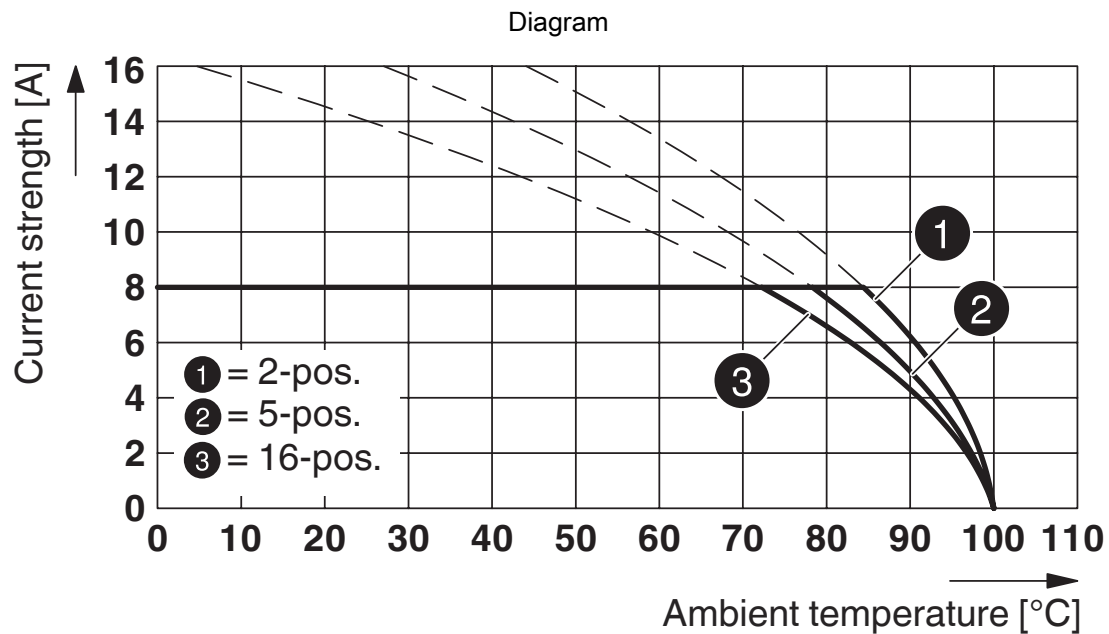


Type: MC 1,5/...-ST-3,81 with MCVU 1,5/...-GFD-3,81

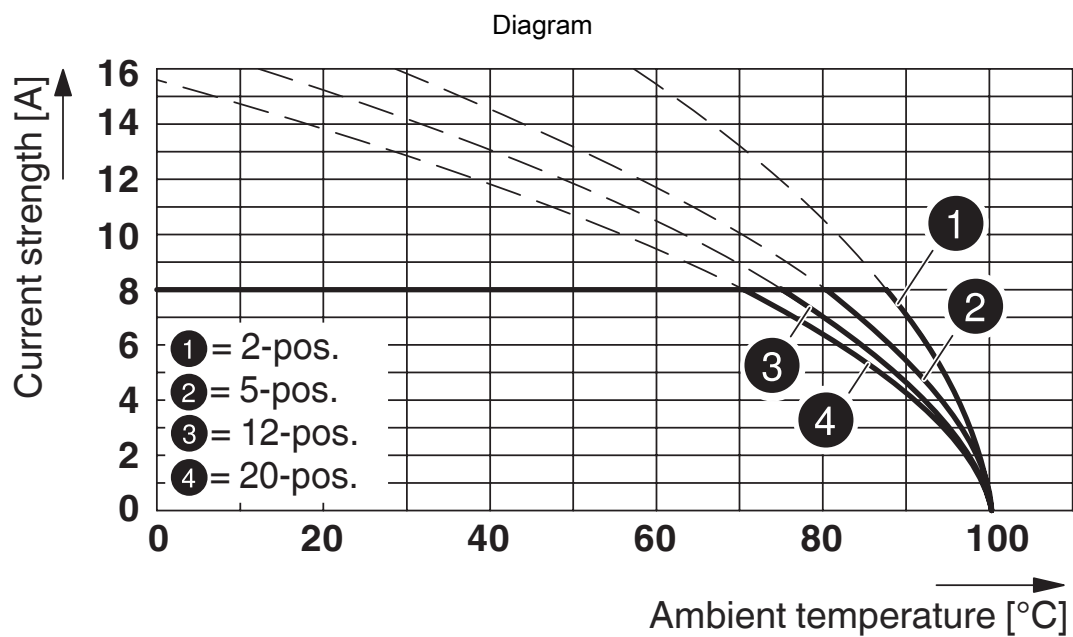
# MC 1,5/11-ST-3,81 - PCB connector

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Type: MC 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81

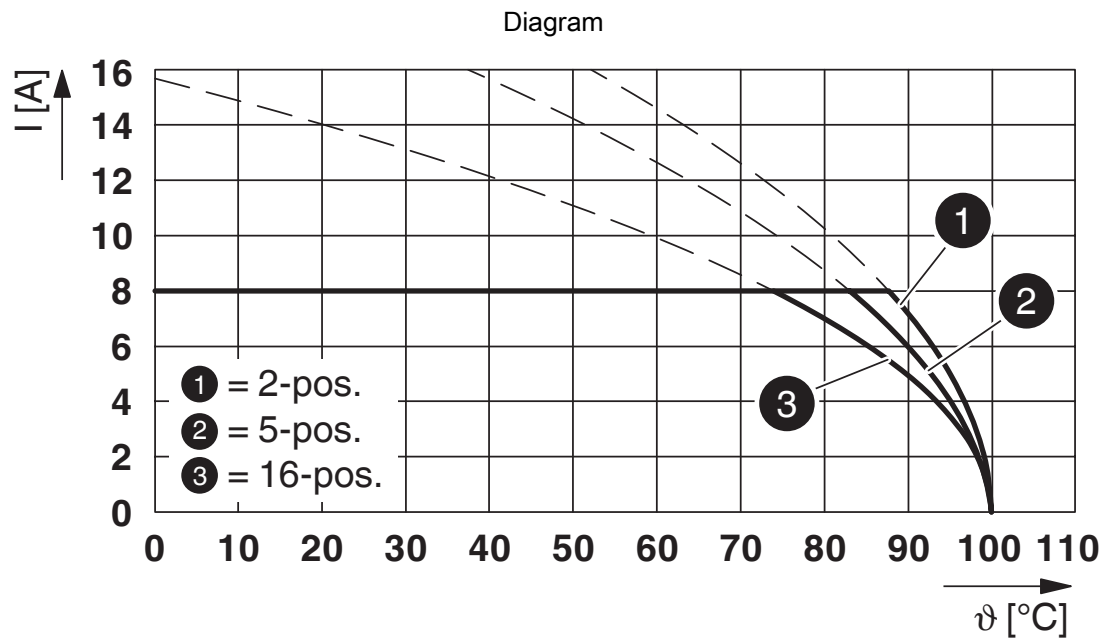


Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81

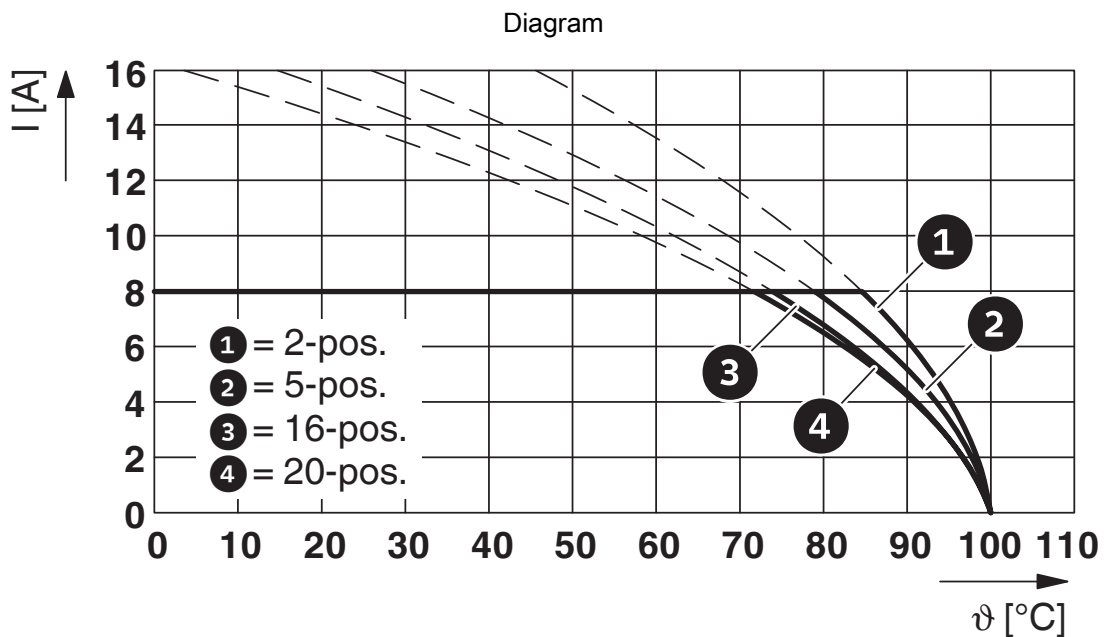
# MC 1,5/11-ST-3,81 - PCB connector

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Type: MC 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81



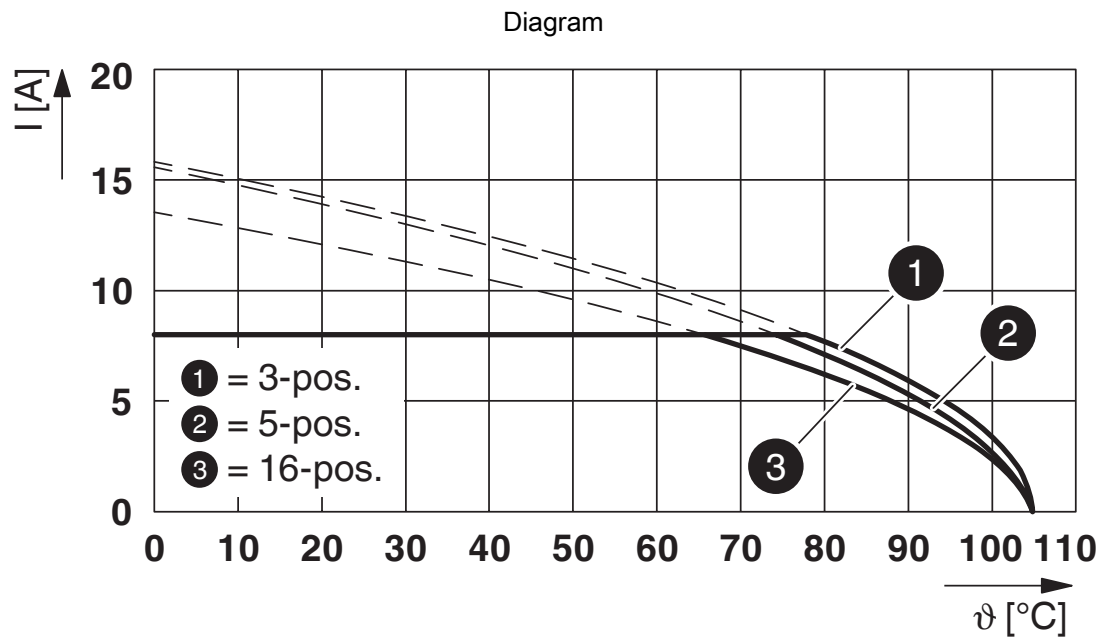
Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P...THR

# MC 1,5/11-ST-3,81 - PCB connector

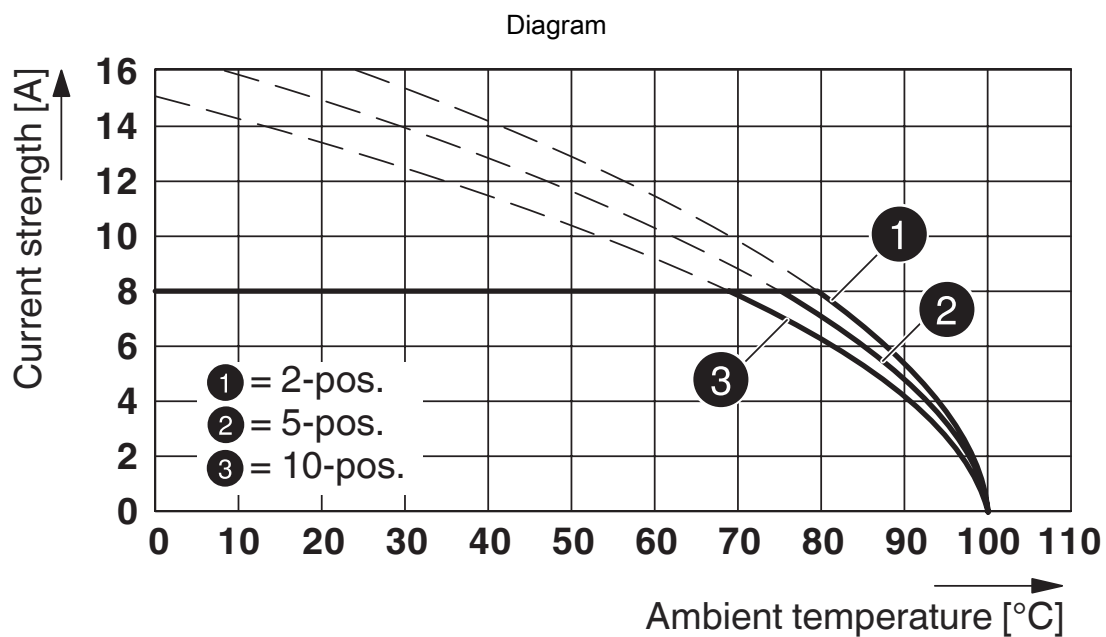


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<https://www.phoenixcontact.com/us/products/1803662>



Type: MC 1,5/...-ST-3,81 with MCVK 1,5/...-G-3,81

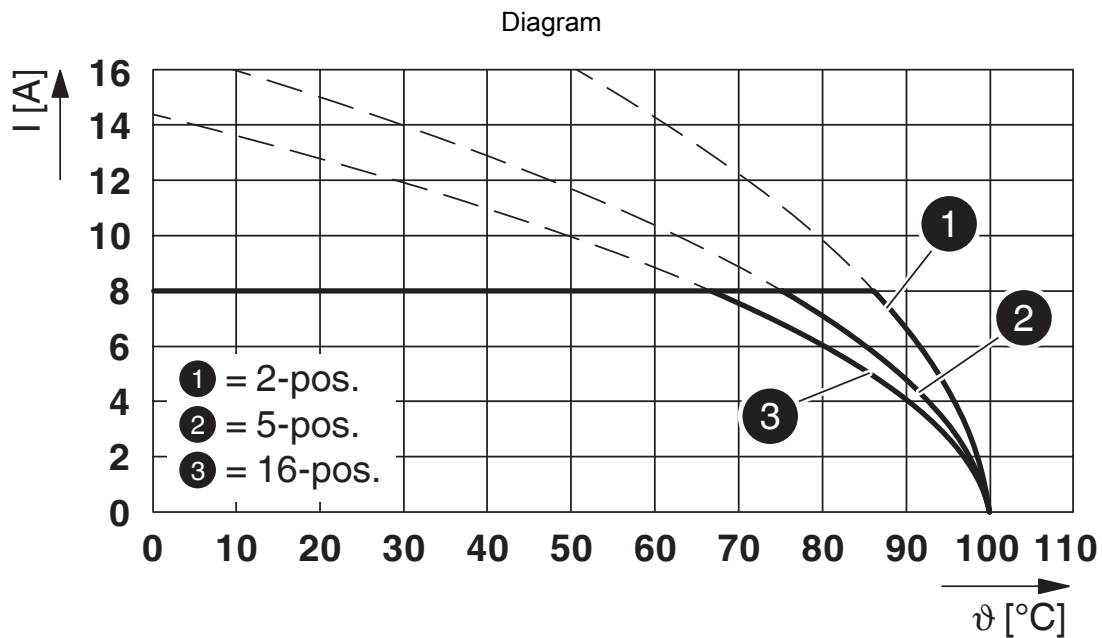


Type: MC 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81

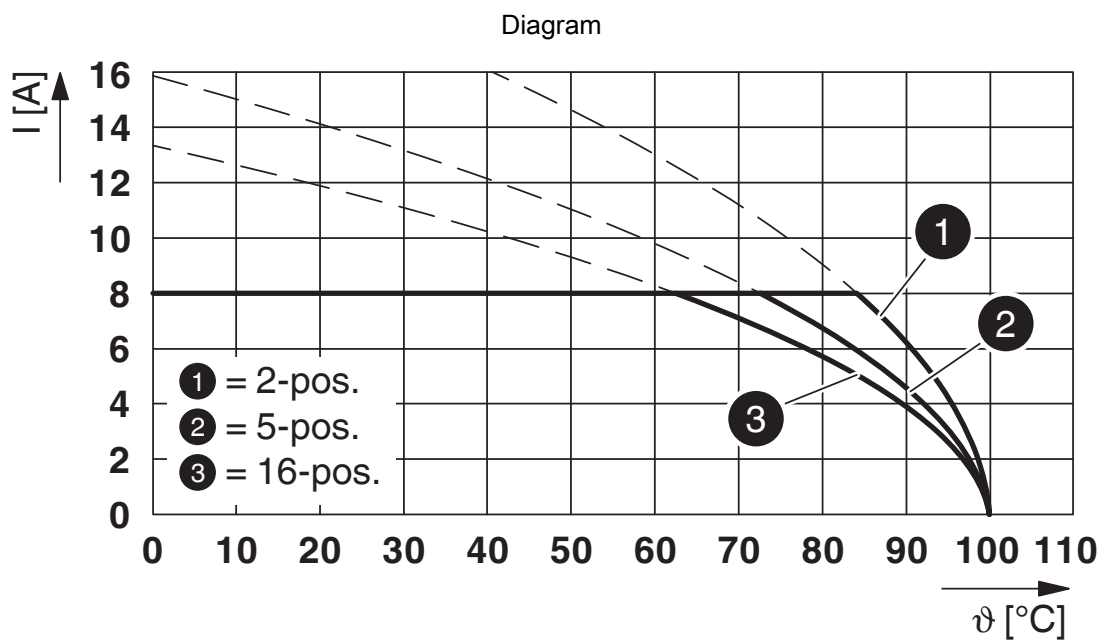
# MC 1,5/11-ST-3,81 - PCB connector

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



Type: MC 1,5/...-ST-3,81 with MCD 1,5/...-G-3,81

# MC 1,5/11-ST-3,81 - PCB connector

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1803662>



**CSA**  
Approval ID: 13631

|                                                                                   |                                                         |                       |                   |                             |
|-----------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>cULus Recognized</b><br>Approval ID: E60425-20110128 |                       |                   |                             |
|                                                                                   | Nominal voltage $U_N$                                   | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                                                                       |                                                         |                       |                   |                             |
|                                                                                   | 300 V                                                   | 8 A                   | 30 - 14           | -                           |
| Use group D                                                                       |                                                         |                       |                   |                             |
|                                                                                   | 300 V                                                   | 8 A                   | 30 - 14           | -                           |

|                                                                                     |                                                        |                       |                   |                             |
|-------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>VDE Zeichengenehmigung</b><br>Approval ID: 40011723 |                       |                   |                             |
|                                                                                     | Nominal voltage $U_N$                                  | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                                                                     | 160 V                                                  | 8 A                   | -                 | 0.2 - 1.5                   |



**CSA**  
Approval ID: 13631

# MC 1,5/11-ST-3,81 - PCB connector



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460202 |
| ECLASS-12.0 | 27460202 |
| ECLASS-13.0 | 27460202 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002638 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

# MC 1,5/11-ST-3,81 - PCB connector



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## Environmental product compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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