

# FK-MC 0,5/ 3-ST-2,5 - PCB connector



1881338

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PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: green, nominal current: 4 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FK-MC 0,5/.-ST, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON FK-MC 0,5, locking: without, mounting method: without, type of packaging: packed in cardboard

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Intuitive operation due to color-coded actuating push button
- Operation and conductor connection from one direction enable integration into front of device
- Quick and convenient testing using integrated test option

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1881338             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 1 pc                |
| Product key                          | AAAFCA              |
| Catalog page                         | Page 168 (C-1-2013) |
| GTIN                                 | 4017918156589       |
| Weight per piece (including packing) | 2.091 g             |
| Weight per piece (excluding packing) | 1.82 g              |
| Customs tariff number                | 85366990            |
| Country of origin                    | DE                  |

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## Technical data

### Product properties

|                       |                        |
|-----------------------|------------------------|
| Product type          | PCB connector          |
| Product family        | FK-MC 0,5/...-ST       |
| Product line          | COMBICON Connectors XS |
| Type                  | Standard               |
| Number of positions   | 3                      |
| Pitch                 | 2.5 mm                 |
| Number of connections | 3                      |
| Number of rows        | 1                      |
| Number of potentials  | 3                      |
| Mounting flange       | without                |

### Electrical properties

|                             |              |
|-----------------------------|--------------|
| Nominal current $I_N$       | 4 A          |
| Nominal voltage $U_N$       | 160 V        |
| Contact resistance          | 2 m $\Omega$ |
| Rated voltage (III/3)       | 100 V        |
| Rated surge voltage (III/3) | 1.5 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 FK-MC 0,5  |
| Nominal cross section   | 0.5 mm <sup>2</sup> |
| Contact connection type | Socket              |

#### Interlock

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

#### Conductor connection

|   |  |
|---|--|
| Connection method   | Push-in spring connection                    |
| Conductor/PCB connection direction                                    | 0 °  |
| Conductor cross section rigid   | 0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |
| Conductor cross section flexible                                      | 0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |
| Conductor cross section AWG   | 26 ... 20                                    |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |

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|                                    |            |
|------------------------------------|------------|
| Cylindrical gauge a x b / diameter | - / 1.4 mm |
| Stripping length                   | 8 mm       |

## Specifications for ferrules without insulating collar

|  |   |
|--|---|
| recommended crimping tool                                    | 1212034 CRIMPFOX 6  |
| ferrules without insulating collar, according to DIN 46228-1 | Cross section: 0.25 mm <sup>2</sup> ; Length: 7 mm ... 8 mm |
|  | Cross section: 0.34 mm <sup>2</sup> ; Length: 7 mm ... 8 mm |
|  | Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm           |

## 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)  |

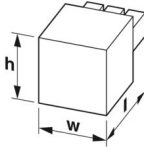
### Material data - housing

|   |              |
|---|--------------|
| 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       |

### Material data – actuating element

|  |               |
|--|---------------|
| Color (Actuating element)              | orange (2003) |
| Insulating material                    | PBT           |
| Insulating material group              | I             |
| CTI according to IEC 60112             | 600           |
| Flammability rating according to UL 94 | V0            |

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Pitch               | 2.5 mm   |
| Width [w]           | 8.1 mm   |

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|            |          |
|------------|----------|
| Height [h] | 11.75 mm |
| Length [l] | 19.05 mm |

## Notes

|                    |  |
|--------------------|--|
| Notes on operation | In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load. |
|--------------------|--|

## Mechanical tests

### Conductor connection

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

### Test for conductor damage and slackening

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

### Repeated connection and disconnection

|               |                     |
|---------------|---------------------|
| 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 | 0.2 mm <sup>2</sup> / solid / > 10 N    |
|   | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|   | 0.5 mm <sup>2</sup> / solid / > 20 N    |
|   | 0.5 mm <sup>2</sup> / flexible / > 20 N |

### Insertion and withdrawal forces

|                                     |                        |
|-------------------------------------|------------------------|
| Specification                       | IEC 60512-13-2:2006-02 |
| Result                              | Test passed            |
| No. of cycles                       | 25                     |
| Insertion strength per pos. approx. | 8 N                    |
| Withdraw strength per pos. approx.  | 6 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

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

## Environmental and real-life conditions

### 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) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |
| Test directions        | X-, Y- and Z-axis           |

### 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 mΩ                  |
| Contact resistance R <sub>2</sub>            | 2.2 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 | 12                    |

### Insulation resistance

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

### Temperature cycles

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

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## Air clearances and creepage distances |

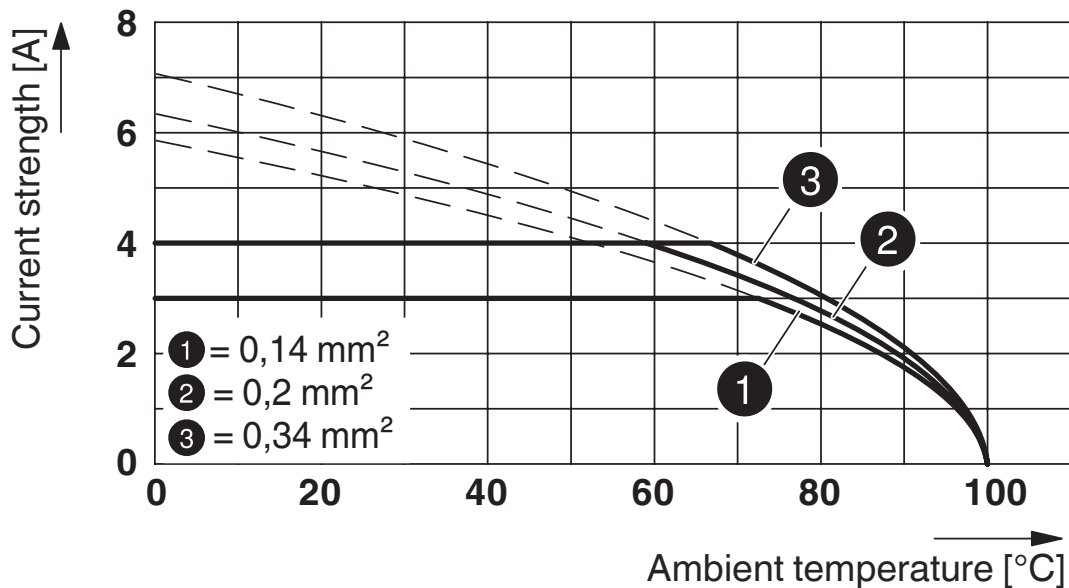
|  |   |
|--|---|
| Specification  | IEC 60664-1:1992-10 + A1:2000-02 + A2:2002-05 |
| Insulating material group                              | I   |
| Comparative tracking index (IEC 60112)                 | CTI 600                                       |
| Rated insulation voltage (III/3)                       | 100 V   |
| Rated surge voltage (III/3)                            | 1.5 kV  |
| minimum clearance value - non-homogenous field (III/3) | 0.8 mm  |
| minimum creepage distance (III/3)                      | 1.8 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)                      | 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 |
|-------------------|---------------------|

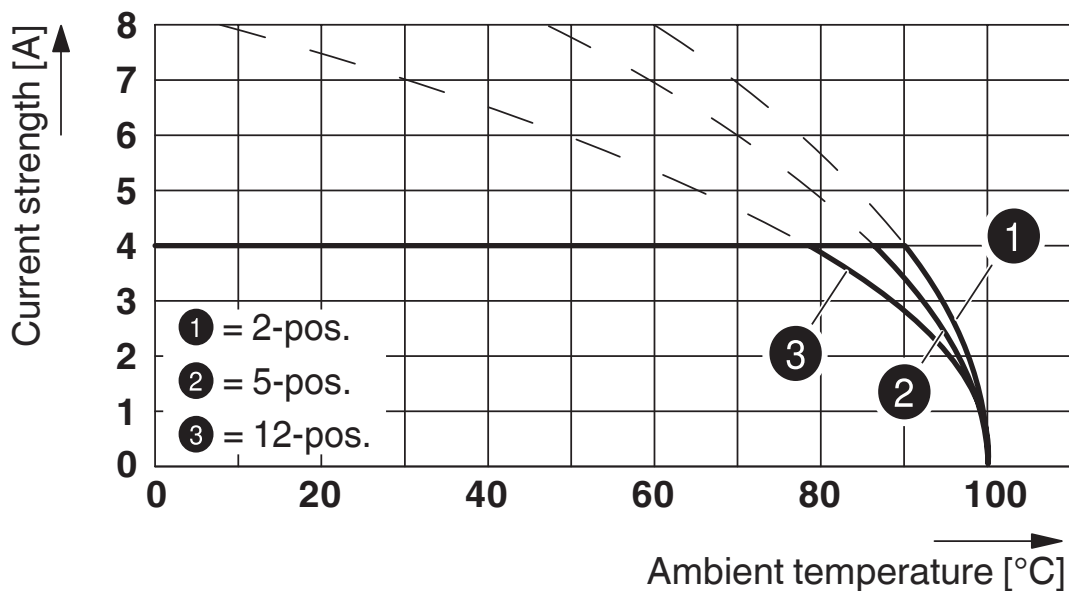
## Drawings

Diagram



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

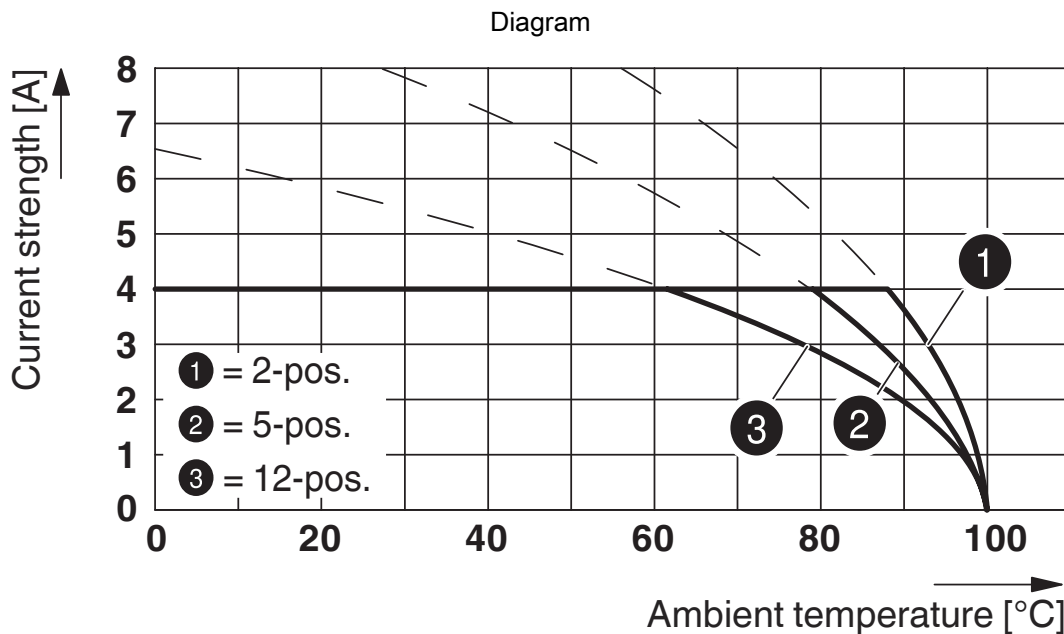
Diagram



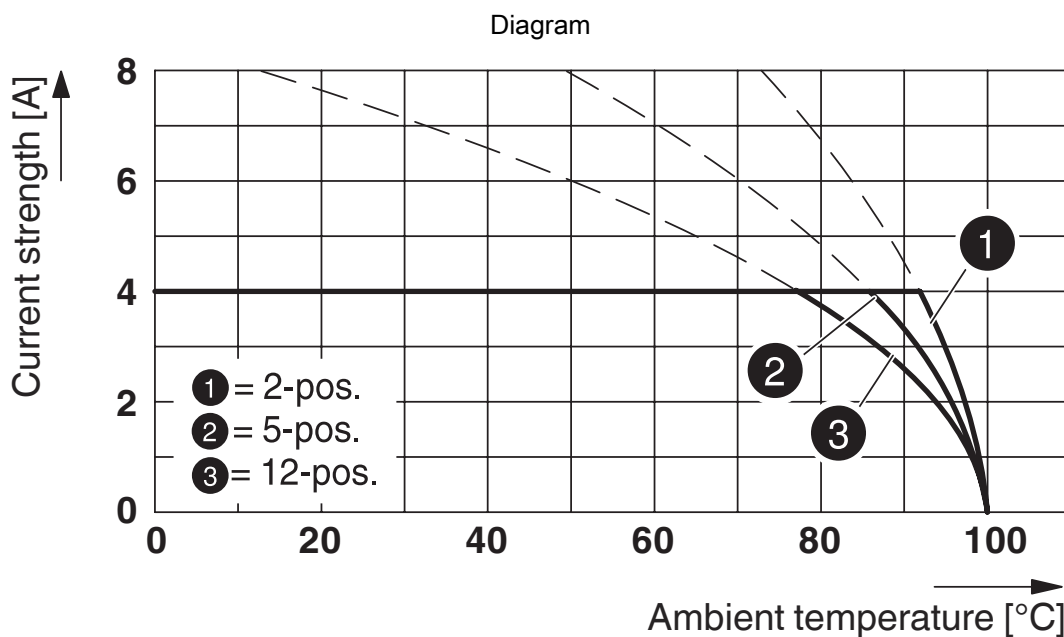
Type: FK-MC 0,5/...-ST-2,5 with MC 0,5/...-G-2,5 THT

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Type: FK-MC 0,5/...-ST-2,5 with MCD 0,5/...-G1-2,5



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

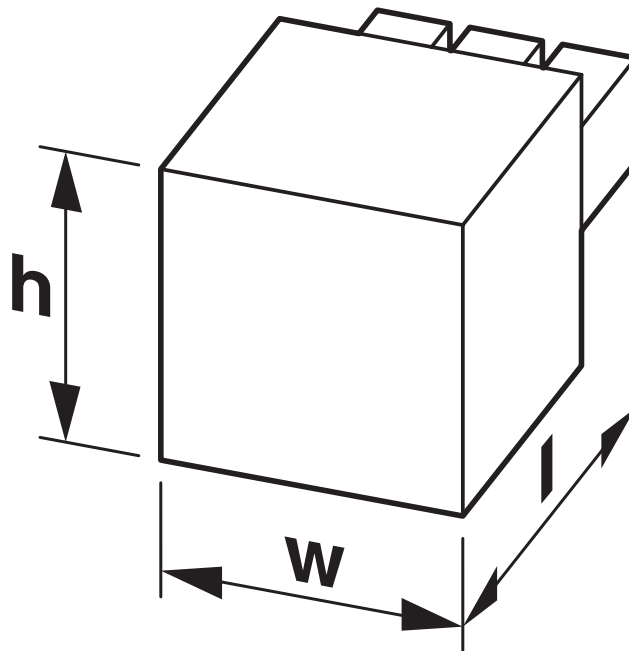


# FK-MC 0,5/ 3-ST-2,5 - PCB connector

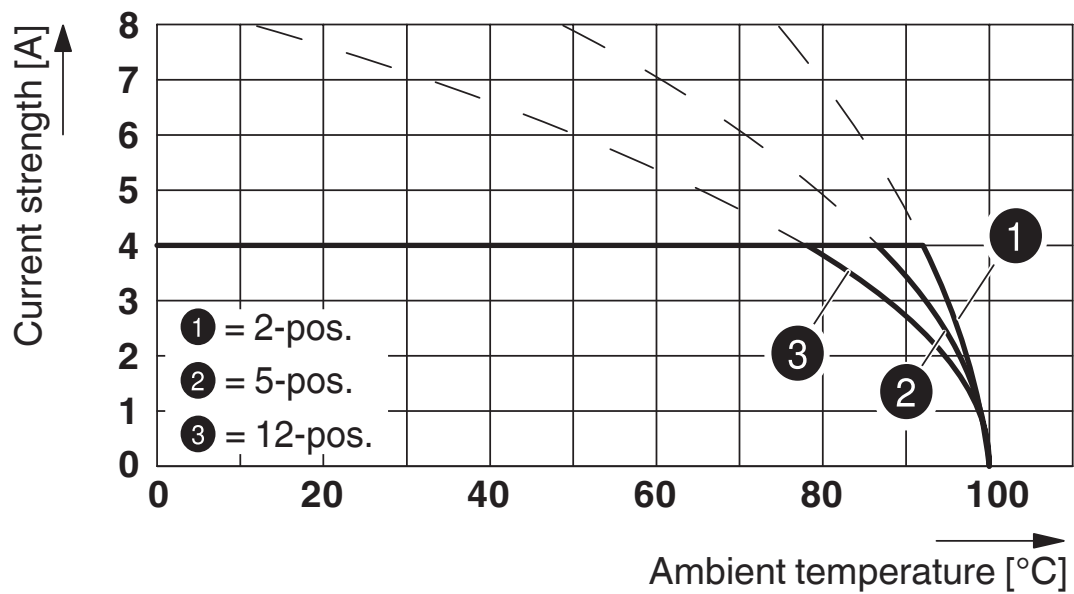
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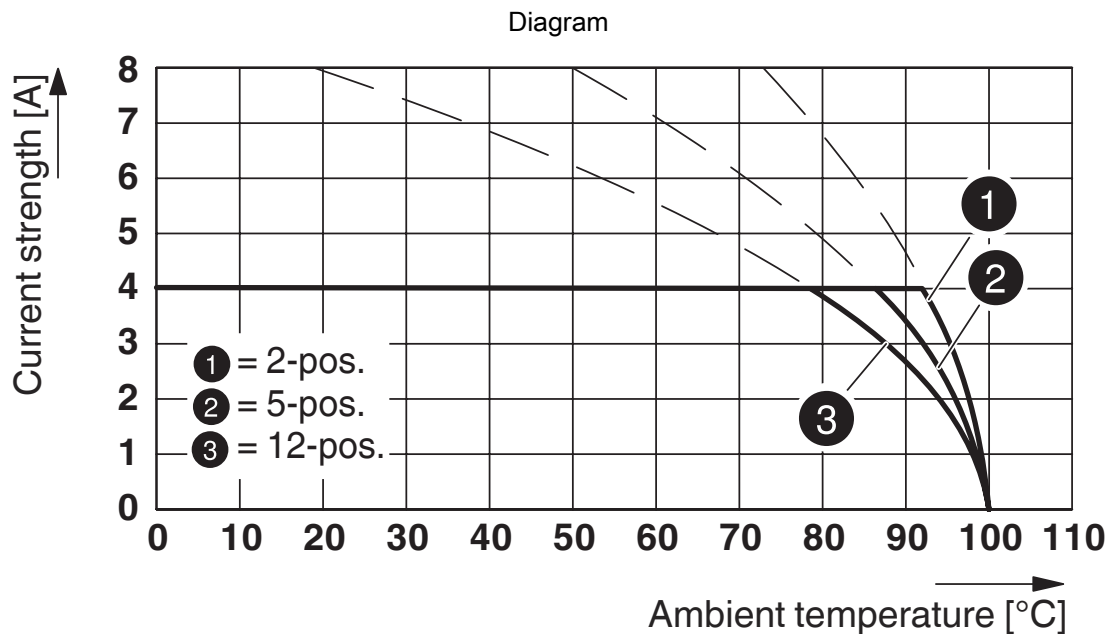
Dimensional drawing



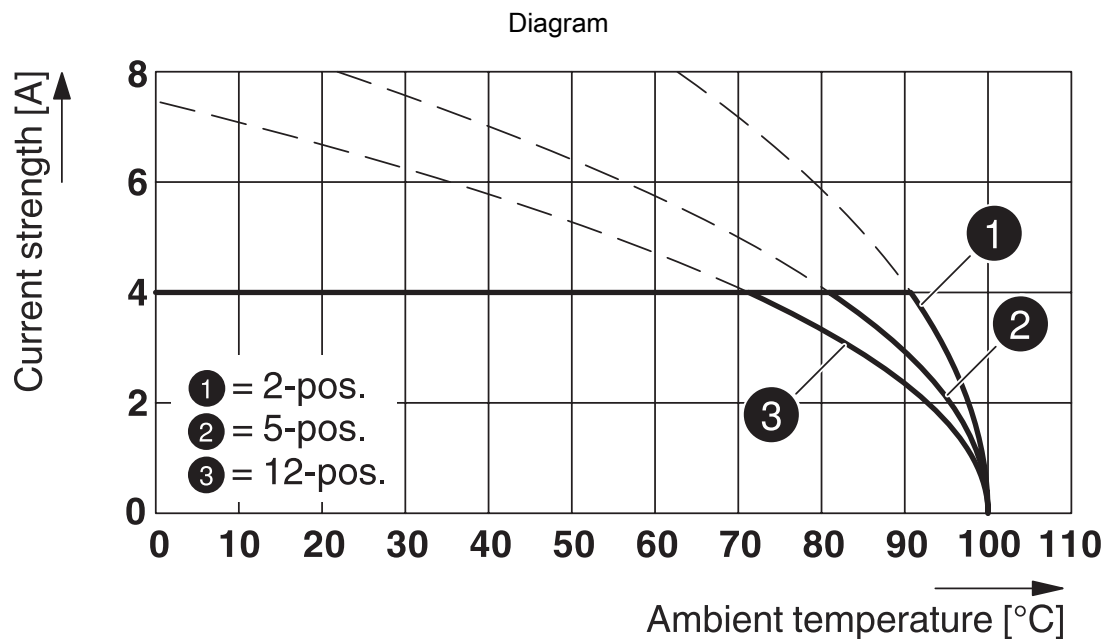
Diagram



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



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



Type: FK-MC 0,5/...-ST-2,5 with MCD 0,5/...-G1-2,5 HT BK

# FK-MC 0,5/ 3-ST-2,5 - PCB connector





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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1881338>

|  <b>cULus Recognized</b><br>Approval ID: E60425-19990913 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B   |                       |                       |                   |                             |
|   | 125 V                 | 4 A                   | 28 - 20           | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40013394 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|   | 100 V                 | 4 A                   | -                 | 0.2 - 0.5                   |

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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 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

### 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% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.022 kg CO2e |
|---------|---------------|

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