

# FK-MPT 0,5/ 2-3,5 - PCB terminal block

1891069

<https://www.phoenixcontact.com/us/products/1891069>

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The figure shows an 10-position version

Printed circuit board terminal, nominal current: 4 A, rated voltage (III/2): 250 V, nominal cross section: 0.5 mm<sup>2</sup>, number of potentials: 2, number of rows: 1, number of positions per row: 2, product range: FK-MPT 0,5/..-V, pitch: 3.5 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 90 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.5 mm, number of solder pins per potential: 1, 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
- Potentials can be easily looped through – ideal for BUS applications
- Small component size for applications where space is at a premium
- Vertical connection enables multi-row arrangement on the PCB

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1891069       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA11          |
| Product key                          | AAKBCB        |
| GTIN                                 | 4017918169589 |
| Weight per piece (including packing) | 0.91 g        |
| Weight per piece (excluding packing) | 0.897 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | IN            |

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## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | FK-MPT 0,5/..-V                |
| Product line              | COMBICON Terminals XS          |
| Type                      | PC termination block           |
| Number of positions       | 2                              |
| Pitch                     | 3.5 mm                         |
| Number of connections     | 4                              |
| Number of rows            | 1                              |
| Number of potentials      | 2                              |
| Mounting type             | without                        |
| Pin layout                | Linear pinning                 |
| Solder pins per potential | 1                              |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 4 A    |
| Nominal voltage $U_N$       | 250 V  |
| Rated voltage (III/3)       | 160 V  |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2)       | 250 V  |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated voltage (II/2)        | 250 V  |
| Rated surge voltage (II/2)  | 2.5 kV |

### Connection data

#### Conductor connection

|                               |  |
|-------------------------------|--|
| Connection method             | Push-in spring connection                    |
| Conductor cross-section rigid | 0.12 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> |
| Conductor cross-section AWG   | 26 ... 20                                    |
| Stripping length              | 6.5 mm                                       |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
| Pin layout    | Linear pinning |

### Material specifications

#### Material data - contact

|      |  |
|------|--|
| Note | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
|------|--|

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|   |                         |
|---|-------------------------|
| Contact material                            | Steel/copper            |
| Surface characteristics                     | Tin-plated              |
| Metal surface terminal point (top layer)    | Tin (5 µm - 7 µm Sn)    |
| Metal surface terminal point (middle layer) | Copper (2 µm - 3 µm Cu) |
| Metal surface soldering area (top layer)    | Tin (5 µm - 7 µm Sn)    |
| Metal surface soldering area (middle layer) | Copper (2 µm - 3 µm Cu) |

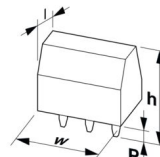
## Material data - housing

|  |              |
|--|--------------|
| Color (Housing)                        | green (6021) |
| Insulating material                    | PBT          |
| Insulating material group              | IIIa         |
| CTI according to IEC 60112             | 225          |
| Flammability rating according to UL 94 | V0           |

## Material data – actuating element

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

## Dimensions

|                       |  |
|-----------------------|--|
| Dimensional drawing   |  |
| Pitch                 | 3.5 mm   |
| Width [w]             | 7.5 mm   |
| Height [h]            | 13 mm  |
| Length [l]            | 7 mm   |
| Installed height      | 9.5 mm   |
| Solder pin length [P] | 3.5 mm   |
| Pin dimensions        | 0.35 x 0.9 mm  |

## PCB design

|               |      |
|---------------|------|
| Hole diameter | 1 mm |
|---------------|------|

## Mechanical tests

### Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1990-05 |
| Result        | Test passed         |

### Pull-out test

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1990-05 |
|---------------|---------------------|

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|   |                                       |
|---|---------------------------------------|
| Conductor cross-section/conductor type/tractive force setpoint/actual value | 0.14 mm <sup>2</sup> / solid / > 10 N |
|   | 0.5 mm <sup>2</sup> / solid / > 30 N  |

## Electrical tests

### Temperature-rise test

|                                   |                                |
|-----------------------------------|--------------------------------|
| Specification                     | IEC 60998-1:1990-04            |
| Requirement temperature-rise test | Increase in temperature ≤ 45 K |

### Insulation resistance

|  |                     |
|--|---------------------|
| Specification                                | IEC 60512-2:1985-00 |
| Insulation resistance, neighboring positions | 10 <sup>12</sup> Ω  |

### Air clearances and creepage distances |

|  |                     |
|--|---------------------|
| Specification  | IEC 60664-1:2007-04 |
| Insulating material group                              | IIIa                |
| Comparative tracking index (IEC 60112)                 | CTI 225             |
| 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)                      | 2.5 mm              |
| Rated insulation voltage (III/2)                       | 250 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)                      | 2.5 mm              |
| Rated insulation voltage (II/2)                        | 250 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)                       | 2.5 mm              |

## Environmental and real-life conditions

### Vibration test

|                        |                             |
|------------------------|-----------------------------|
| Specification          | IEC 60068-2-6:1995-03       |
| 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           |

### 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 ... 100 °C (Depending on the current carrying capacity/derating curve) |

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## Packaging specifications

| Type of packaging   |
|---------------------|
| packed in cardboard |

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## Drawings

Dimensional drawing



Drilling plan/solder pad geometry



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1891069>

|  <b>cULus Recognized</b><br>Approval ID: E60425-19991118 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   | 300 V                 | 4 A                   | 28 - 20           | -                           |
| D   | 300 V                 | 4 A                   | 28 - 20           | -                           |

|  <b>VDE approval of drawings</b><br>Approval ID: 40055523 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  | 250 V                 | 4 A                   | -                 | 0.2 - 0.5                   |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460101 |
| ECLASS-15.0 | 27460101 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002643 |
|-----------|----------|

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

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)