# FMC 0,5/ 2-ST-2,54 C2 - PCB connector

1706243

https://www.phoenixcontact.com/us/products/1706243

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The figure shows a 10-position version of the product

PCB connector, nominal cross section: 0.5 mm$^2$, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Au, contact connection type: Socket, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, product range: FMC 0,5/..-ST, pitch: 2.54 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON FMC 0,5, locking: without, mounting method: without, type of packaging: packed in cardboard, Fixed coding of last position; can be combined with MC(V) 0,5/...-G-2,54...C2 headers

## Your advantages

- Gold-plated contacts ensure transfer quality remains stable over the long term
- 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
- Optimized for tight installation situations: operation and conductor connection from one direction

## Commercial data

| | |
|---|---|
| Item number | 1706243 |
| Packing unit | 200 pc |
| Minimum order quantity | 200 pc |
| Sales key | AA01 |
| Product key | AAAFAA |
| GTIN | 4046356841252 |
| Weight per piece (including packing) | 0.581 g |
| Weight per piece (excluding packing) | 0.576 g |
| Customs tariff number | 85366990 |
| Country of origin | PL |

# Technical data

## Product properties

| | |
|---|---|
| Product type | PCB connector |
| Product family | FMC 0,5/..-ST |
| Product line | COMBICON Connectors XS |
| Type | Standard |
| Number of positions | 2 |
| Pitch | 2.54 mm |
| Number of connections | 2 |
| Number of rows | 1 |
| Number of potentials | 2 |
| Mounting type | without |

### Fitting of components

| | |
|---|---|
| Partial assembly | No |

## Electrical properties

### Properties

| | |
|---|---|
| Nominal current $I_N$ | 6 A |
| Nominal voltage $U_N$ | 160 V |
| Contact resistance | 2.7 mΩ |
| Rated voltage (III/3) | 32 V |
| Rated surge voltage (III/3) | 0.8 kV |
| Rated voltage (III/2) | 160 V |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated voltage (II/2) | 160 V |
| Rated surge voltage (II/2) | 1.5 kV |

## Connection data

### Connection technology

| | |
|---|---|
| Type | Standard |
| Connector system | COMBICON FMC 0,5 |
| Nominal cross section | 0.5 mm² |
| Contact connection type | Socket |

### Interlock

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

### Conductor connection

| | |
|---|---|
| Connection method | Push-in spring connection |
| Conductor/PCB connection direction | 0 ° |
| Conductor cross-section rigid | 0.14 mm² ... 0.5 mm² |

| | |
|---|---|
| Conductor cross-section flexible | 0.14 mm² ... 0.5 mm² |
| Conductor cross-section AWG | 26 ... 20 |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm² ... 0.34 mm² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.14 mm² ... 0.25 mm² |
| Cylindrical gauge a x b / diameter | - / 1.0 mm |
| Stripping length | 7 mm |

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 | partially gold-plated |
| Metal surface terminal point (top layer) | Tin (5 µm - 7 µm Sn) |
| Metal surface terminal point (middle layer) | Nickel (2 µm - 3 µm Ni) |
| Metal surface contact area (top layer) | Gold (0.25 µm Au) |
| Metal surface contact area (middle layer) | Nickel (2 µm - 3 µm Ni) |

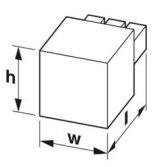
Material data - housing

| | |
|---|---|
| Color (Housing) | black (9005) |
| Insulating material | LCP |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 175 |
| Flammability rating according to UL 94 | V0 |

Material data – actuating element

| | |
|---|---|
| Color (Actuating element) | orange (2003) |
| Insulating material | LCP |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 175 |
| Flammability rating according to UL 94 | V0 |

## Dimensions

| | |
|---|---|
| Dimensional drawing |  |

| | |
|---|---|
| Pitch | 2.54 mm |
| Width [w] | 5.58 mm |
| Height [h] | 5.35 mm |
| Length [l] | 14 mm |

## 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 | 0.14 mm² / solid / > 10 N |
| | 0.14 mm² / flexible / > 10 N |
| | 0.5 mm² / solid / > 20 N |
| | 0.5 mm² / flexible / > 20 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. | 2 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 $R_1$ | 2.7 mΩ |
| Contact resistance $R_2$ | 2.6 mΩ |
| Insertion/withdrawal cycles | 100 |
| Insulation resistance, neighboring positions | > 5 MΩ |

Climatic test

| | |
|---|---|
| Specification | DIN 50018:2013-05 |
| Corrosive stress | 1.0 $dm^3$ $SO_2$ on 300 $dm^3$/40 °C/3 cycles |
| Thermal stress | 100 °C/168 h |
| Power-frequency withstand voltage | 1.39 kV |

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 (pos. and neg.) |

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 (dependent on the derating curve) |

## 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 |

Temperature cycles

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

Air clearances and creepage distances |

| | |
|---|---|
| Specification | IEC 60664-1:2007-04 |

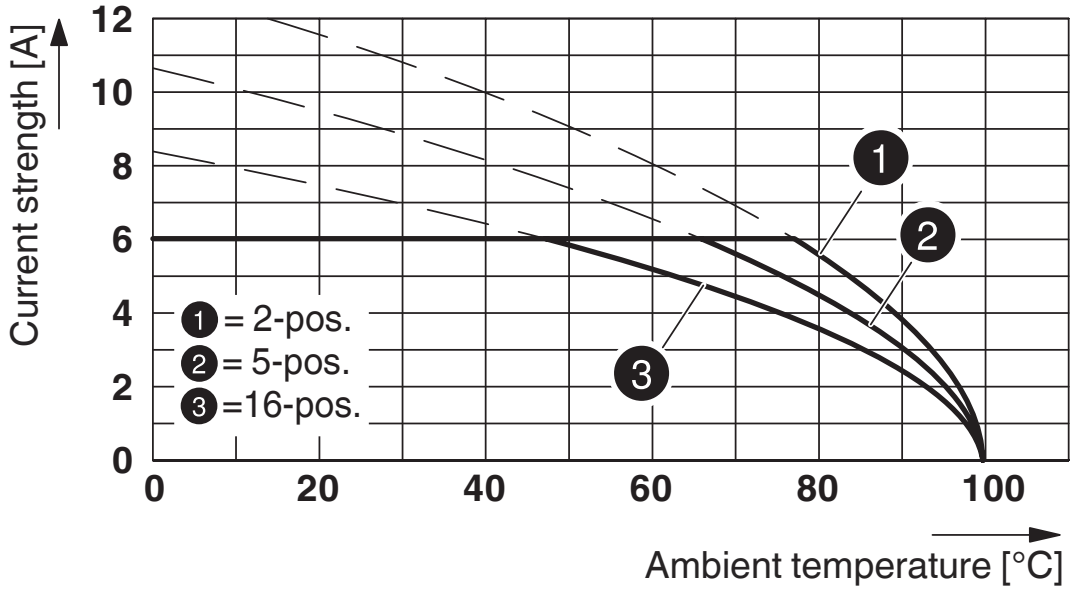
| | |
|---|---|
| Insulating material group | IIIa |
| Comparative tracking index (IEC 60112) | CTI 175 |
| Rated insulation voltage (III/3) | 32 V |
| Rated surge voltage (III/3) | 0.8 kV |
| minimum clearance value - non-homogenous field (III/3) | 0.8 mm |
| minimum creepage distance (III/3) | 1.3 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) | 1.6 mm |
| Rated insulation voltage (II/2) | 160 V |
| Rated surge voltage (II/2) | 1.5 kV |
| minimum clearance value - non-homogenous field (II/2) | 0.5 mm |
| minimum creepage distance (II/2) | 1.6 mm |

## Packaging specifications

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

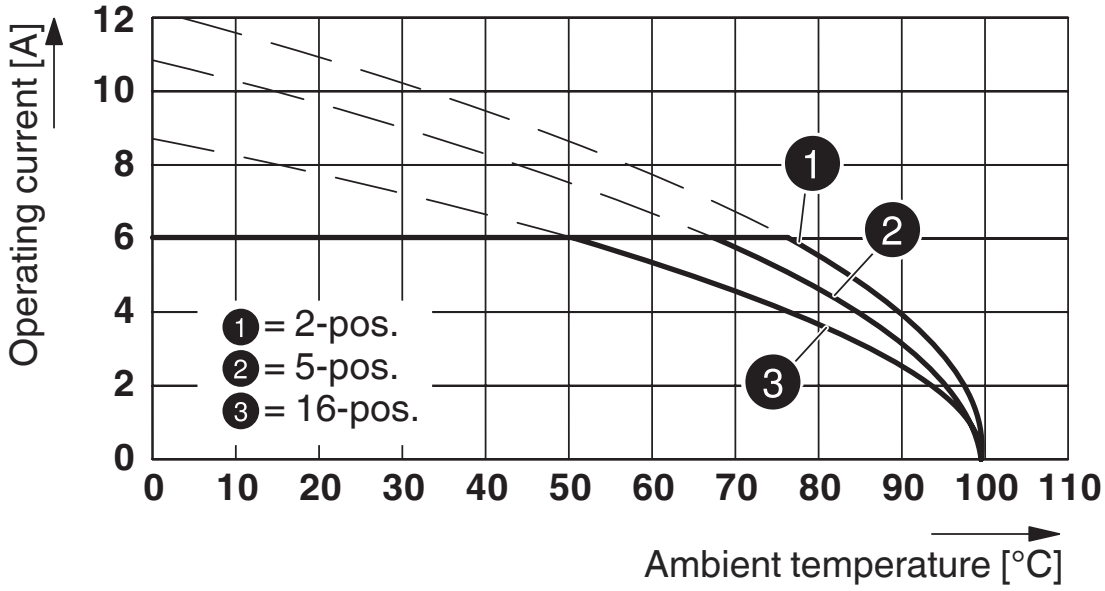
## Drawings

Diagram



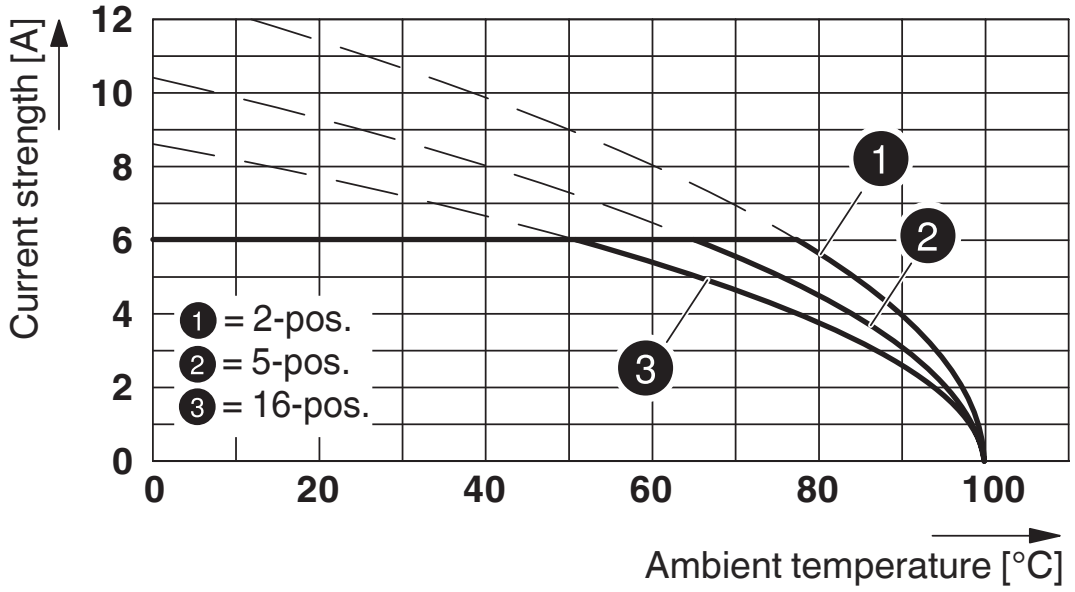

Type: FMC 0,5/...-ST-2,54 with MC 0,5/...-G-2,54 P20 THR R..

Diagram



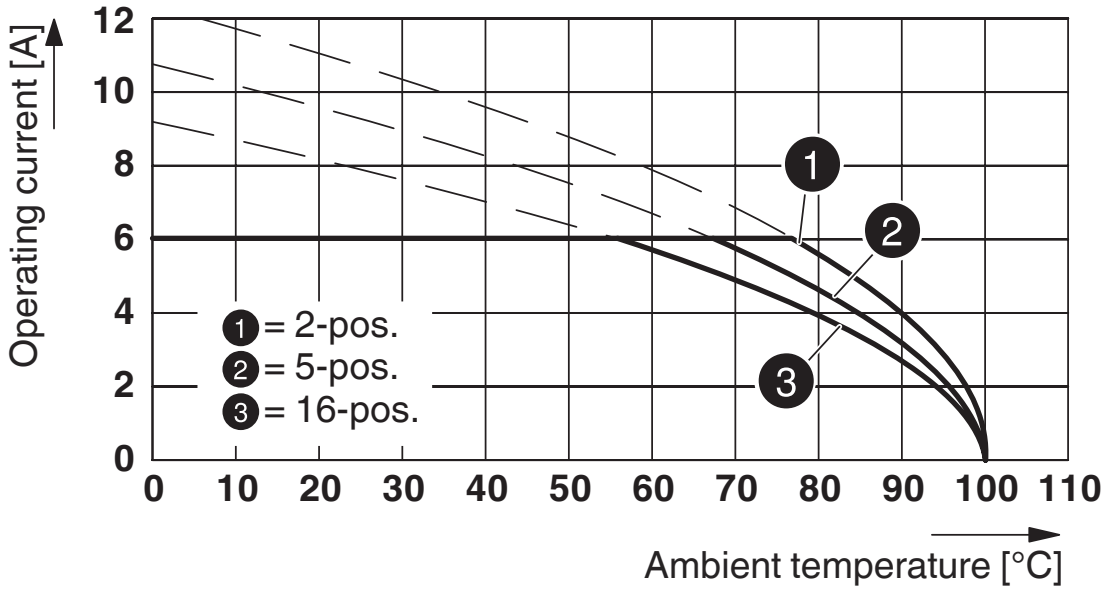

Type: FMC 0,5/...-ST-2,54 with MC 0,5/...-G-2,54 SMD R..

Diagram




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

Diagram




Type FMC 0,5/...-ST-2,54 with MCV 0,5/...-G-2,54 SMD R..

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1706243

**cULus Recognized**
Approval ID: E60425-19920306

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| B | | | | |
| Field wiring | 150 V | 5 A | 26 - 20 | - |
| Factory wiring | 150 V | 6 A | 26 - 20 | - |
| C | | | | |
| Factory wiring | 50 V | 6 A | 26 - 20 | - |

**VDE Gutachten mit Fertigungsüberwachung**
Approval ID: 40042258

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 160 V | 6 A | - | 0.14 - 0.5 |

**UL Recognized**
Approval ID: E60425-19920306

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| F | | | | |
| Field wiring | 160 V | 5 A | 26 - 20 | - |
| Factory wiring | 160 V | 6 A | 26 - 20 | - |

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27460202 |
| ECLASS-15.0 | 27460202 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC002638 |

### UNSPSC

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

## 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% |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 0.027 kg CO2e |


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