

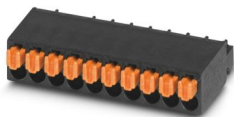
# FMC 0,5/ 3-ST-2,54 C2 - PCB connector



1706242

<https://www.phoenixcontact.com/us/products/1706242>

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PCB connector, nominal cross section: 0.5 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: 3, number of rows: 1, number of positions: 3, number of connections: 3, 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                          | 1706242                        |
| Packing unit                         | 200 pc                         |
| Minimum order quantity               | 200 pc                         |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA01                           |
| Product key                          | AAFAA                          |
| Catalog page                         | Page 175 (C-1-2013)            |
| GTIN                                 | 4046356841269                  |
| Weight per piece (including packing) | 0.815 g                        |
| Weight per piece (excluding packing) | 0.811 g                        |
| Customs tariff number                | 85366990                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                       |                        |
|-----------------------|------------------------|
| Product type          | PCB connector          |
| Product family        | FMC 0,5/...-ST         |
| Product line          | COMBICON Connectors XS |
| Type                  | Standard               |
| Number of positions   | 3                      |
| Pitch                 | 2.54 mm                |
| Number of connections | 3                      |
| Number of rows        | 1                      |
| Number of potentials  | 3                      |
| Mounting flange       | without                |

### Electrical 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 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> ... 0.34 mm <sup>2</sup> |

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|                                                                      |                                               |
|----------------------------------------------------------------------|-----------------------------------------------|
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.14 mm <sup>2</sup> ... 0.25 mm <sup>2</sup> |
| 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 - 7 µm Sn)                                                                |
| Metal surface terminal point (middle layer) | Nickel (2 - 3 µm Ni)                                                             |
| Metal surface contact area (top layer)      | Gold (0.25 Au)                                                                   |
| Metal surface contact area (middle layer)   | Nickel (2 - 3 µm Ni)                                                             |

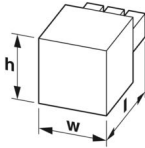
### Material data - housing

|                                        |              |
|----------------------------------------|--------------|
| 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]           | 8.12 mm                                                                              |
| Height [h]          | 5.35 mm                                                                              |
| Length [l]          | 14 mm                                                                                |

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## 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 mm <sup>2</sup> / solid / > 10 N    |
|                                                                             | 0.14 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                       | 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

### Vibration test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:2007-12 |
|---------------|-----------------------|

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|                        |                                   |
|------------------------|-----------------------------------|
| 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.) |

## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance R <sub>1</sub>            | 2.7 mΩ                |
| Contact resistance R <sub>2</sub>            | 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 <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/3 cycles |
| 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 | 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              |

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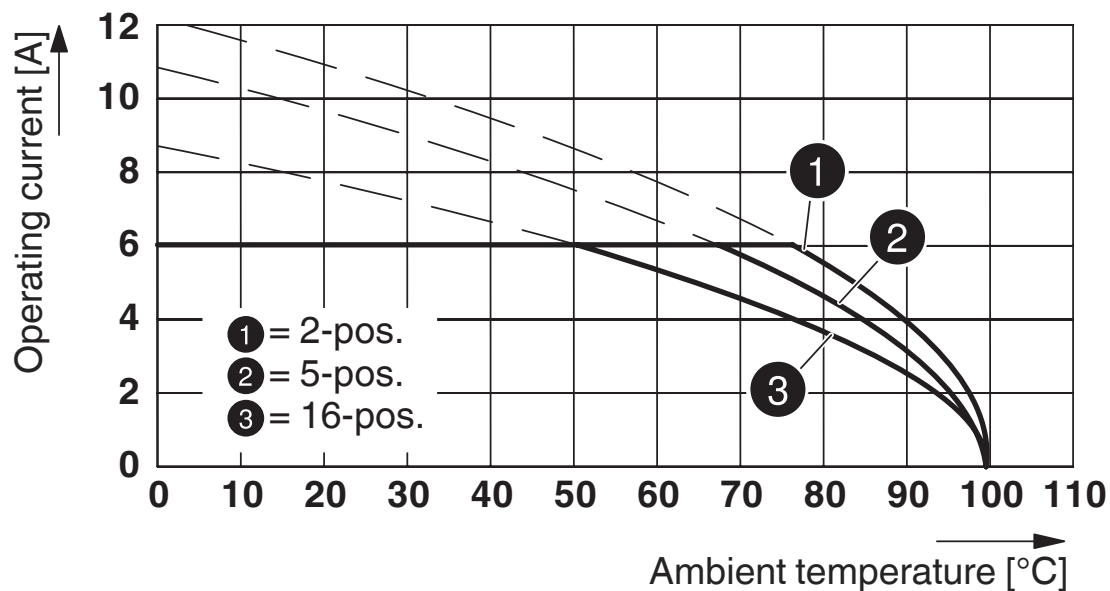
|                                                        |        |
|--------------------------------------------------------|--------|
| minimum clearance value - non-homogenous field (III/3) | 0.8 mm |
| minimum creepage distance (III/3)                      | 1.3 mm |
| Rated insulation voltage (III/2)                       | 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 |
|-------------------|---------------------|

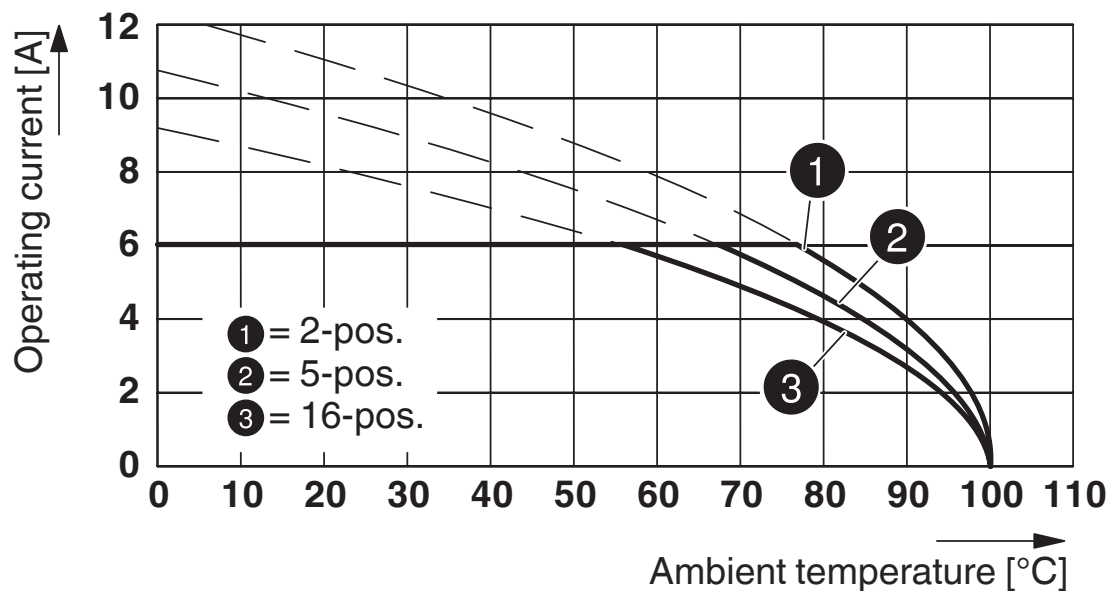
## Drawings

Diagram



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

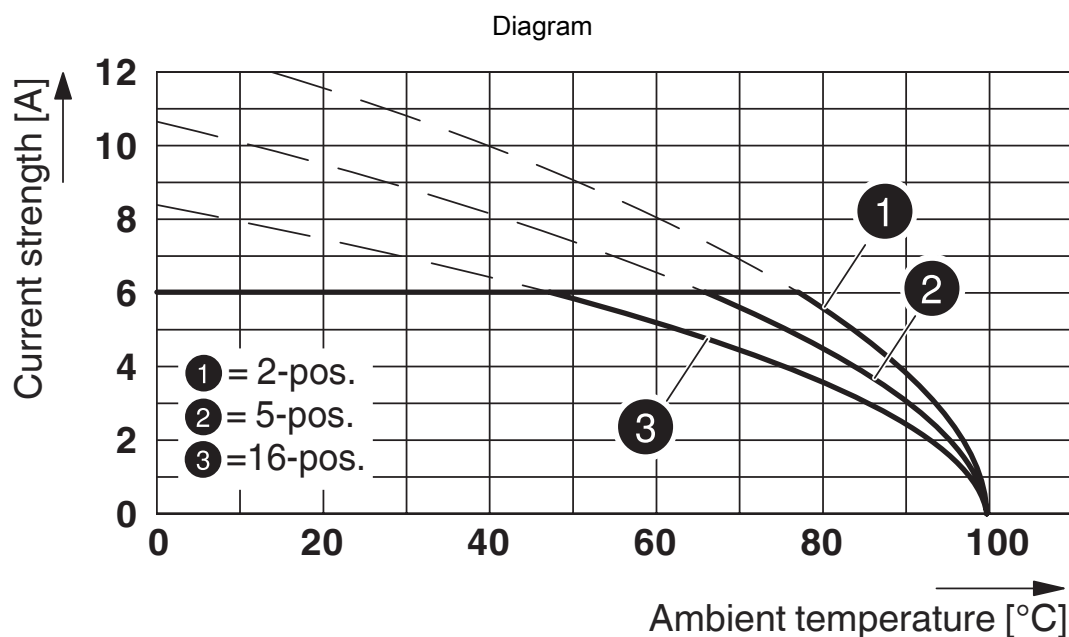
Diagram



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



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



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

# FMC 0,5/ 3-ST-2,54 C2 - PCB connector



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1706242>

|  <b>cULus Recognized</b><br>Approval ID: E60425-19920306 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                                                                                                                               |                       |                       |                   |                             |
| Field wiring                                                                                                                              | 150 V                 | 5 A                   | 26 - 20           | -                           |
| Factory wiring                                                                                                                            | 150 V                 | 6 A                   | 26 - 20           | -                           |
| Use group C                                                                                                                               |                       |                       |                   |                             |
| Factory wiring                                                                                                                            | 50 V                  | 6 A                   | 26 - 20           | -                           |
| Use group F                                                                                                                               |                       |                       |                   |                             |
| Field wiring                                                                                                                              | 160 V                 | 5 A                   | 26 - 20           | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40042258 |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                                          | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                                                                                                                                          | 160 V                 | 6 A                   | -                 | 0.14 - 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% |
|-------------------------------------|----------------------------|

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