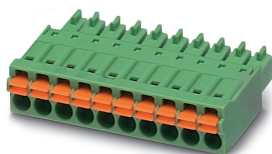


# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

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The figure shows a 10-position version of the product


PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: yellow, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 10, Number of rows: 1, Number of positions per row: 10, number of connections: 10, product range: FMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: MINI COMBICON, Locking: 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 use through colour coded actuation lever
- Operation and conductor connection from one direction enable integration into front of device



## Key Commercial Data

|                        |   |
|------------------------|---|
| Packing unit           | 50 pc   |
| Minimum order quantity | 50 pc   |
| GTIN                   | <br>4 0 5 5 6 2 6 4 7 3 0 2 4 |
| GTIN                   | 4055626473024   |

## Technical data

### Item properties

|                           |                                 |
|---------------------------|---------------------------------|
| Brief article description | Printed-circuit board connector |
| Plug-in system            | MINI COMBICON                   |
| Type of contact           | Female connector                |
| Range of articles         | FMC 1,5/..-ST                   |
| Pitch                     | 3.5 mm                          |
| Number of positions       | 10                              |
| Number of levels          | 1                               |
| Number of connections     | 10                              |
| Number of potentials      | 10                              |

# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

## Technical data

### Electrical parameters

|                             |        |
|-----------------------------|--------|
| Nominal current             | 8 A    |
| Nom. voltage                | 160 V  |
| Rated voltage (III/3)       | 160 V  |
| Rated voltage (III/2)       | 160 V  |
| Rated voltage (II/2)        | 320 V  |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated surge voltage (II/2)  | 2.5 kV |

### Connection capacity

|   |   |
|---|---|
| Connection method   | Push-in spring connection                     |
| pluggable   | Yes   |
| Conductor cross section solid   | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross section flexible                                      | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross section AWG / kcmil                                   | 24 ... 16                                     |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross section, flexible, with ferrule, with plastic sleeve  | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| Cylindrical gauge a x b / diameter                                    | 2.4 mm x 1.5 mm / -                           |
| Stripping length  | 10 mm   |

### Specifications for ferrules

|  |   |
|--|---|
| Recommended crimping pliers                                  | 1212034 CRIMPFOX 6  |
| Ferrules without insulating collar, according to DIN 46228-1 | Cross section: 0.25 mm <sup>2</sup> ; Length: 7 mm  |
|  | Cross section: 0.34 mm <sup>2</sup> ; Length: 7 mm  |
|  | Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                     |
|  | Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                    |
|  | Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                       |
|  | Cross section: 1.5 mm <sup>2</sup> ; Length: 10 mm  |
| Additional text  | The 0.75 mm <sup>2</sup> ferrule is to be inserted parallel to the groove of the spring opener. |
| Recommended crimping pliers                                  | 1212034 CRIMPFOX 6  |
| Ferrules with insulating collar, according to DIN 46228-4    | Cross section: 0.14 mm <sup>2</sup> ; Length: 8 mm  |
|  | Cross section: 0.25 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                    |
|  | Cross section: 0.34 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                    |
|  | Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm                                     |
|  | Cross section: 0.75 mm <sup>2</sup> ; Length: 10 mm   |
| Additional text  | The 0.75 mm <sup>2</sup> ferrule is to be inserted parallel to the groove of the spring opener. |

### Material data - contact

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

# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

## Technical data

### Material data - contact

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

|   |               |
|---|---------------|
| Housing color   | yellow (1018) |
| 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

|  |     |
|--|-----|
| Insulating material                    | PBT |
| CTI according to IEC 60112             | 600 |
| Flammability rating according to UL 94 | V0  |

### Dimensions for the product

|              |  |
|--------------|--|
| Caption      | Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center |
| Length [ l ] | 21.9 mm  |
| Width [ w ]  | 35.75 mm   |
| Height [ h ] | 7.75 mm  |
| Pitch        | 3.5 mm   |

### Packaging information

|                            |                     |
|----------------------------|---------------------|
| Type of packaging          | packed in cardboard |
| Pieces per package         | 50                  |
| Denomination packing units | Pcs.                |

### Ambient conditions

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

### Termination and connection method

|  |   |
|--|---|
| Conductor connection test                | The stripped-off ends of the largest conductor can be completely inserted in the opening of the terminal point without using excessive force. |
| Test result                              | Test passed   |
| Test – repeated connection and release   | IEC 60999-1:1999-11   |
|  | Test passed   |
| Test for conductor damage and slackening | IEC 60999-1:1999-11   |

# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

## Technical data

### Termination and connection method

|  |             |
|--|-------------|
|  | Test passed |
|--|-------------|

### Pull-out test

|  |   |
|--|---|
| Pull-out test  | IEC 60999-1:1999-11                     |
| Conductor cross section / conductor type / tensile force | 0.2 mm <sup>2</sup> / solid / > 10 N    |
|  | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|  | 1.5 mm <sup>2</sup> / solid / > 40 N    |
|  | 1.5 mm <sup>2</sup> / flexible / > 40 N |

### Mechanical tests according to standard

|                                     |                        |
|-------------------------------------|------------------------|
| Test specification                  | IEC 61984              |
| Visual inspection                   | IEC 60512-1-1:2002-02  |
| Dimension check                     | IEC 60512-1-2:2002-02  |
| Resistance of inscriptions          | IEC 60068-2-70:1995-12 |
| Insertion and withdrawal force      | IEC 60512-13-2:2006-02 |
| No. of cycles                       | 25                     |
| Insertion strength per pos. approx. | 8 N                    |
| Withdraw strength per pos. approx.  | 6 N                    |
| Polarization and coding             | IEC 60512-13-5:2006-02 |
| Contact holder in insert            | IEC 60512-15-1:2008-05 |
| Test force per pos.                 | 27 N                   |

### Air clearances and creepage distances

|   |                     |
|---|---------------------|
| Clearances and creepage distances               | IEC 60664-1:2007-04 |
| Specification                                   | IEC 60664-1:2007-04 |
| Minimum clearance - inhomogeneous field (III/3) | 1.5 mm              |
| Minimum clearance - inhomogeneous field (III/2) | 1.5 mm              |
| Minimum clearance - inhomogeneous field (II/2)  | 1.5 mm              |
| Minimum creepage distance value (III/3)         | 2 mm                |
| Minimum creepage distance value (III/2)         | 1.5 mm              |
| Minimum creepage distance value (II/2)          | 1.6 mm              |

### Current carrying capacity / derating curves

|         |   |
|---------|---|
| Caption | Type: FMC 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5 |
|---------|---|

### Mechanical tests (A)

|  |             |
|--|-------------|
| Test specification                           | IEC 61984   |
| Insertion strength per pos. approx.          | 8 N         |
| Withdraw strength per pos. approx.           | 6 N         |
| Polarization when inserted requirement >20 N | Test passed |
| Contact holder in insert requirements >20 N  | Test passed |

### Durability tests (B)

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
|---------------|-----------------------|

# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

## Technical data

### Durability tests (B)

|  |                |
|--|----------------|
| Contact resistance $R_1$               | 1.5 m $\Omega$ |
| Insertion/withdrawal cycles            | 25             |
| Contact resistance $R_2$               | 1.6 m $\Omega$ |
| Impulse withstand voltage at sea level | 2.95 kV        |

### Thermal tests (C)

|   |                       |
|---|-----------------------|
| Specification                                   | IEC 60512-5-1:2002-02 |
| Number of positions                             | 20                    |
| Upper limiting temperature requirements <100 °C | Test passed           |

### Climatic tests (D)

|  |   |
|--|---|
| Specification                          | ISO 6988:1985-02  |
| Cold stress                            | -40 °C/2 h  |
| Thermal stress                         | 100 °C/168 h  |
| Corrosive stress                       | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle |
| Impulse withstand voltage at sea level | 2.95 kV   |
| Power-frequency withstand voltage      | 1.39 kV   |

### Environmental and durability tests (E)

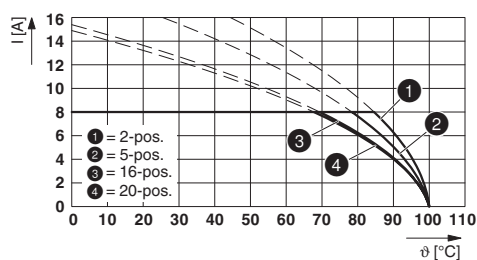
|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Specification                         | IEC 61984:2008-10                   |
| Result, degree of protection, IP code | Finger safety with IP20 test finger |

### Environmental Product Compliance

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

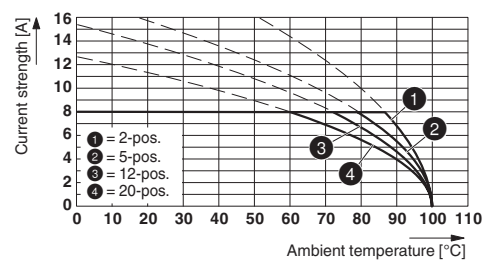
## Drawings

Diagram



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

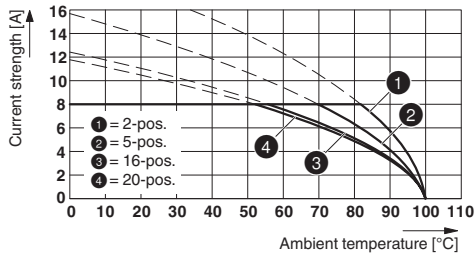
Diagram



Type: FMC 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5 P... THR

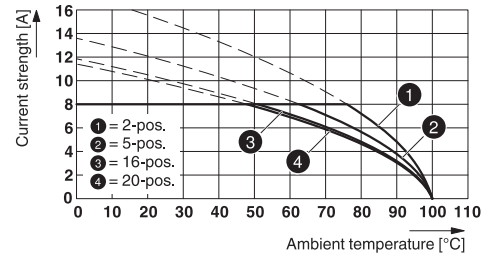
# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

Diagram



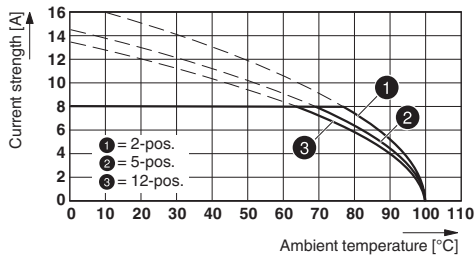
Typ: FMC 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR

Diagram



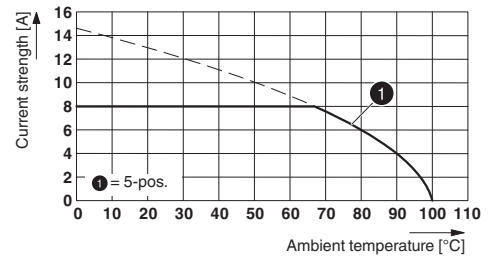
Typ: FMC 1,5/...-ST-3,5 with MCDN 1,5/...-G1-3,5 P26THR

Diagram



Typ: FMC 1,5/...-ST-3,5 with IFMC 1,5/...-ST-3,5

Diagram



Typ: FMC 1,5/...-ST-3,5 with MCD 1,5/...-G3-3,5 P26 THR MAG

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440309 |
| eCl@ss 11.0   | 27460202 |
| eCl@ss 4.0    | 27260700 |
| eCl@ss 4.1    | 27260700 |
| eCl@ss 5.0    | 27260700 |
| eCl@ss 5.1    | 27260700 |
| eCl@ss 6.0    | 27260700 |
| eCl@ss 7.0    | 27440309 |
| eCl@ss 9.0    | 27440309 |

ETIM

|          |          |
|----------|----------|
| ETIM 6.0 | EC002638 |
| ETIM 7.0 | EC002638 |

## Approvals

Approvals

Approvals

VDE Gutachten mit Fertigungsüberwachung / IECCEB Scheme / EAC / cULus Recognized

# Printed-circuit board connector - FMC 1,5/10-ST-3,5 YE CN1,8 - 1713705

## Approvals

Ex Approvals

### Approval details

|   |         |   |          |
|---|---------|---|----------|
| VDE Gutachten mit Fertigungsüberwachung |         | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> | 40011723 |
| Nominal voltage UN                      | 160 V   |   |          |
| Nominal current IN                      | 8 A     |   |          |
| mm <sup>2</sup> /AWG/kcmil              | 0.2-1.5 |   |          |

|                            |         |   |                |
|----------------------------|---------|---|----------------|
| IECEE CB Scheme            |         | <a href="http://www.iecee.org/">http://www.iecee.org/</a> | DE1-60987-B1B2 |
| Nominal voltage UN         | 160 V   |   |                |
| Nominal current IN         | 8 A     |   |                |
| mm <sup>2</sup> /AWG/kcmil | 0.2-1.5 |   |                |

|     |  |         |
|-----|--|---------|
| EAC |  | B.01687 |
|-----|--|---------|

|                            |       |   |                 |
|----------------------------|-------|---|-----------------|
| cULus Recognized           |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | E60425-19920306 |
| Nominal voltage UN         | B     | C   |                 |
| Nominal voltage UN         | 150 V | 50 V  |                 |
| Nominal current IN         | 8 A   | 8 A   |                 |
| mm <sup>2</sup> /AWG/kcmil | 24-16 | 24-16   |                 |

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