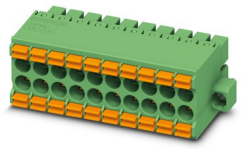
# DFMC 1,5/ 6-STF-3,5 - PCB connector

1790331

https://www.phoenixcontact.com/pc/products/1790331

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.



Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 6 with 12 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin

## 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
- Screwable flange for superior mechanical stability
- Operation and conductor connection from one direction enable integration into front of device

## Commercial Data

| | |
|---|---|
| Item number | 1790331 |
| Packing unit | 50 pc |
| Minimum order quantity | 1 pc |
| Product Key | AABFJB |
| Catalog Page | Page 185 (C-1-2013) |
| GTIN | 4046356594783 |
| Weight per Piece (including packing) | 7.1 g |
| Weight per Piece (excluding packing) | 6.874 g |
| Customs tariff number | 85366990 |
| Country of origin | DE |

## Technical Data

### Product properties

| | |
|---|---|
| Type | Plug component |
| Product line | COMBICON Connectors S |
| Product type | PCB connector |
| Product family | DFMC 1,5/..-STF |
| Number of positions | 6 |
| Pitch | 3.5 mm |
| Number of connections | 12 |
| Number of rows | 2 |
| Mounting flange | Screw flange |
| Number of potentials | 12 |

### Electrical properties

| | |
|---|---|
| Nominal current $I_N$ | 8 A |
| Nominal voltage $U_N$ | 160 V |
| Degree of pollution | 3 |
| Contact resistance | 2.1 mΩ |
| Rated voltage (III/3) | 160 V |
| Rated surge voltage (III/3) | 2.5 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 | Plug component |
| Connector system | COMBICON DFMC 1,5 |
| Nominal cross section | 1.5 mm² |
| Type of contact | Socket |

Interlock

| | |
|---|---|
| Locking type | Screw locking |
| Mounting flange | Screw flange |
| Tightening torque | 0.2 Nm |

Conductor connection

| | |
|---|---|
| Connection method | Push-in spring connection |
| Conductor/PCB connection direction | 0 ° |
| Conductor cross section rigid | 0.2 mm² ... 1.5 mm² |
| Conductor cross section flexible | 0.2 mm² ... 1.5 mm² |
| Conductor cross section AWG | 24 ... 16 |

| | |
|---|---|
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 0.75 mm² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 1.5 mm / 1.6 mm |
| Stripping length | 10 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 mm²; Length: 7 mm |
| | Cross section: 0.34 mm²; Length: 7 mm |
| | Cross section: 0.5 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 0.75 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 1 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 1.5 mm²; Length: 10 mm |

Specifications for ferrules with insulating collar

| | |
|---|---|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
| ferrules with insulating collar, according to DIN 46228-4 | Cross section: 0.14 mm²; Length: 8 mm |
| | Cross section: 0.25 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 0.34 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 0.5 mm²; Length: 8 mm ... 10 mm |
| | Cross section: 0.75 mm²; Length: 10 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

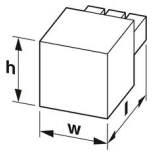
| | |
|---|---|
| Color (Housing) | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |
| Glow wire flammability index GWFI according to EN 60695-2-12 | 850 |
| Glow wire ignition temperature 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 | 3.5 mm |
| Width [w] | 28 mm |
| Height [h] | 13.25 mm |
| Length [l] | 23.35 mm |

## Mounting

| | |
|---|---|
| Connection method | Push-in spring connection |

### Flange

| | |
|---|---|
| Tightening torque | 0.2 Nm |

## 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 mm² / solid / > 10 N |
| | 0.2 mm² / flexible / > 10 N |
| | 1.5 mm² / solid / > 40 N |
| | 1.5 mm² / flexible / > 40 N |

### Insertion and withdrawal forces

| | |
|---|---|
| Result | Test passed |
| No. of cycles | 25 |

| | |
|---|---|
| Insertion strength per pos. approx. | 3 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 |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 Hz ... 60.1 Hz) |
| Sweep speed | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |

Durability test

| | |
|---|---|
| Specification | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 2.95 kV |
| Contact resistance $R_1$ | 2.1 mΩ |
| Contact resistance $R_2$ | 2.4 mΩ |
| Insertion/withdrawal cycles | 25 |

Climatic test

| | |
|---|---|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 $dm^3$ $SO_2$ on 300 $dm^3$/40 °C/1 cycle |
| Thermal stress | 100 °C/168 h |
| Power-frequency withstand voltage | 1.39 kV |

Shocks

| | |
|---|---|
| Specification | IEC 60068-2-27:2008-02 |
| Pulse shape | Semi-sinusoidal |
| Acceleration | 30g |
| Shock duration | 18 ms |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

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 | 20 |

Insulation resistance

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

Temperature cycles

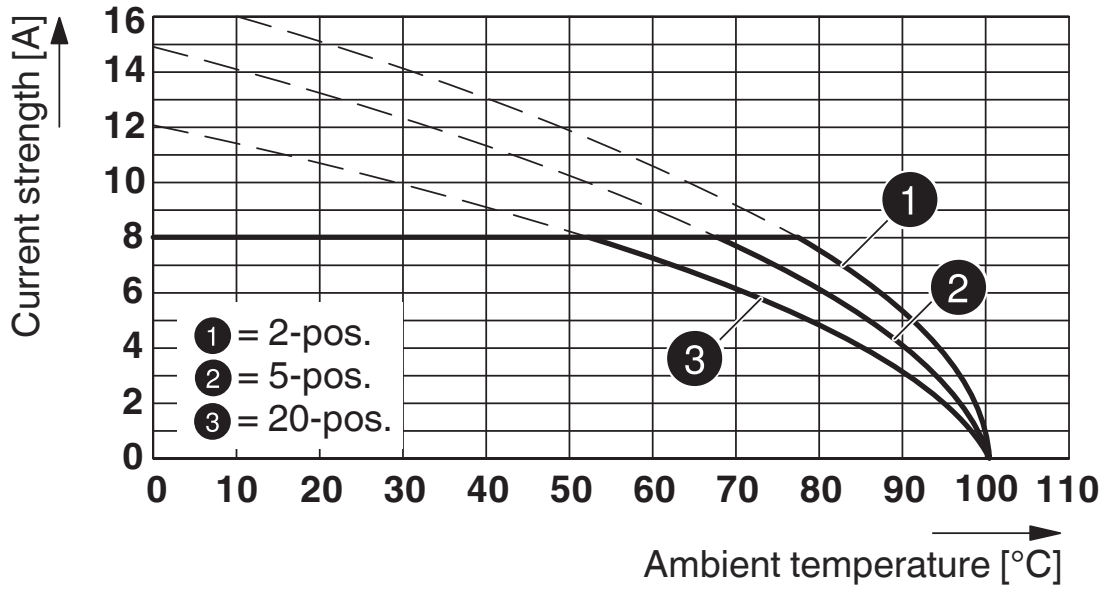
| | |
|---|---|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |

Air clearances and creepage distances |

| | |
|---|---|
| Specification | IEC 60664-1:2007-04 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 600 |
| 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 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 |

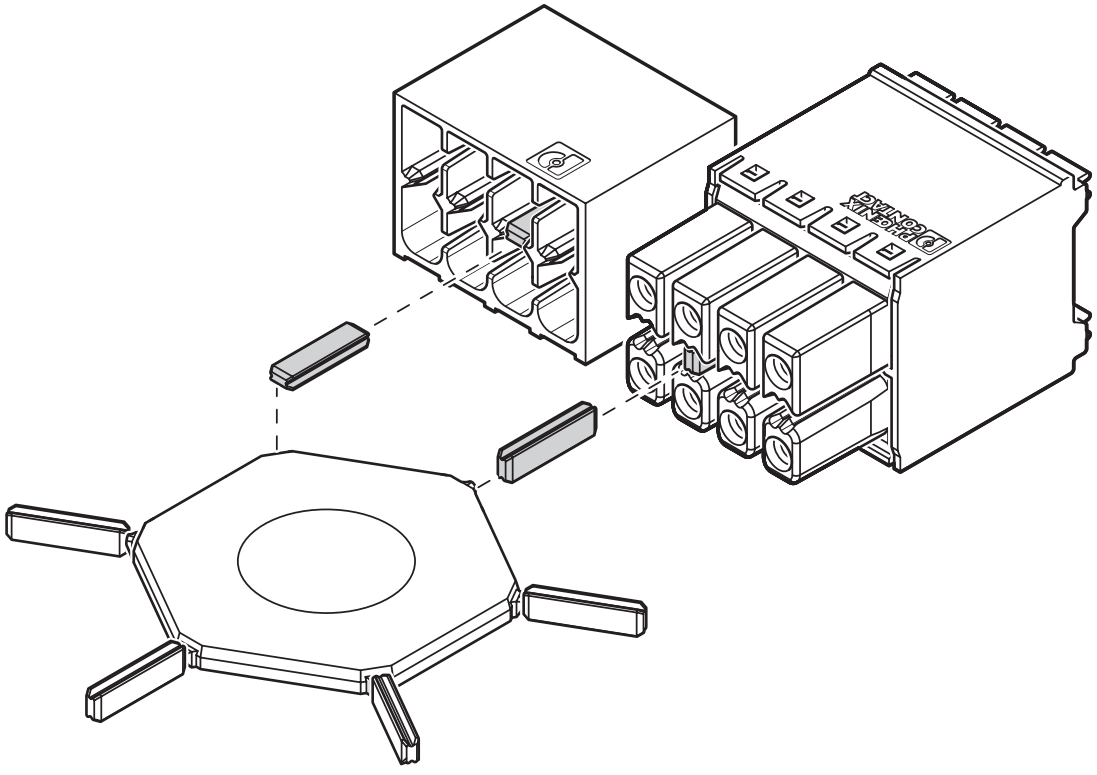
## Drawings

Diagram



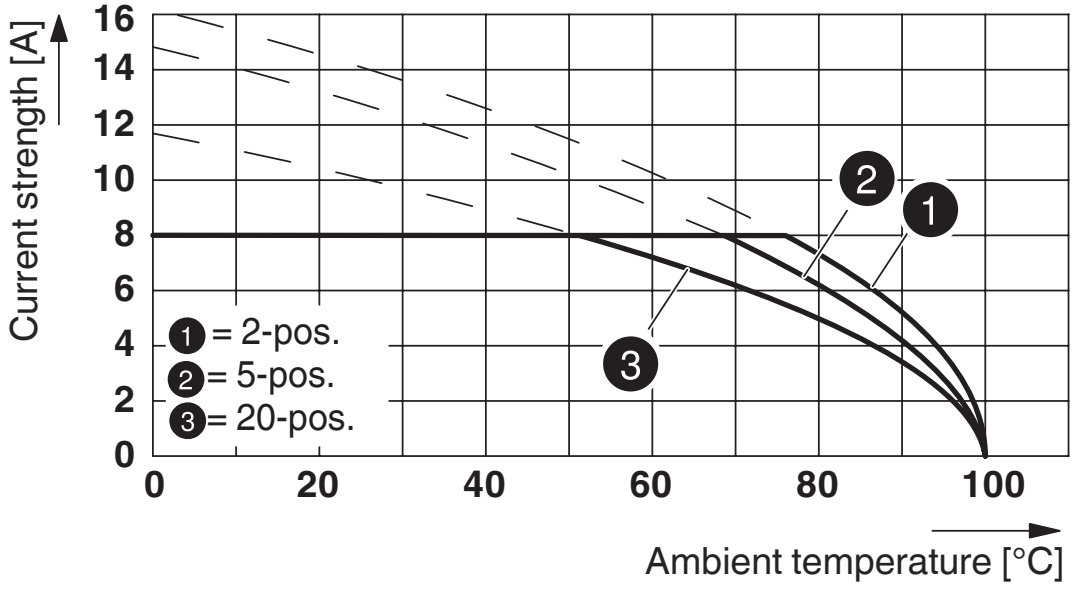

Type: DFMC 1,5/...-STF-3,5 with DMCV 1,5/...-G1F-3,5-LR P...THR

Schematic diagram



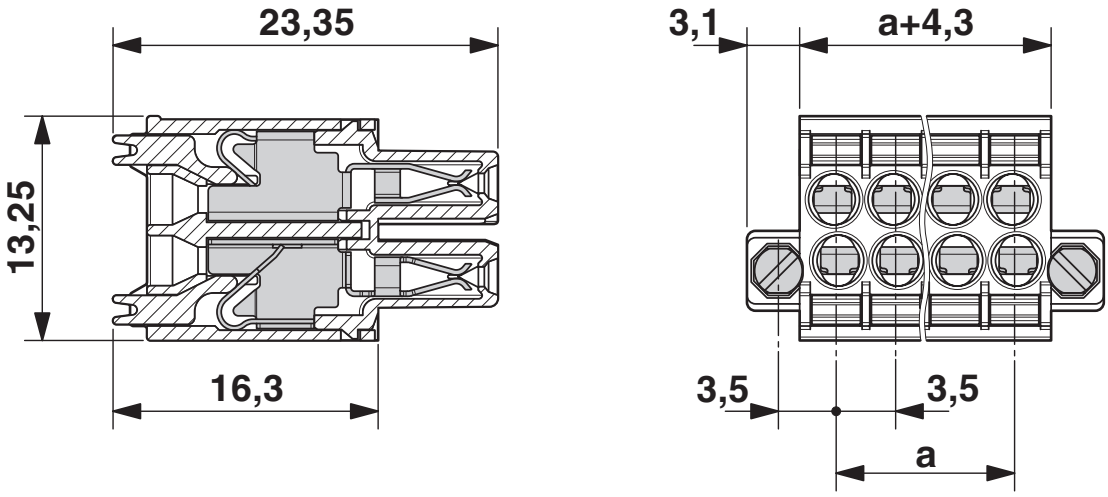
Use of the CP-DMC... coding profile

Diagram




Type: DFMC 1,5/...-STF-3,5 with DMC 1,5/...-G1F-3,5-LR P...THR

Dimensional drawing



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/1790331

**IECEE CB Scheme**
Approval ID: DE1-63831-B1B2

| | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $mm^2$ |
|---|---|---|---|---|
| | 160 V | 8 A | - | - |

**EAC**
Approval ID: B.01687

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

| | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $mm^2$ |
|---|---|---|---|---|
| Use group B | | | | |
| Field wiring | 300 V | 8 A | 24 - 16 | - |
| Use group C | | | | |
| Factory wiring | 50 V | 8 A | 24 - 16 | - |
| Use group D | | | | |
| Field wiring | 300 V | 8 A | 24 - 16 | - |

**VDE Gutachten mit Fertigungsüberwachung**
Approval ID: 40038423

| | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $mm^2$ |
|---|---|---|---|---|
| | 160 V | 8 A | - | 0.2 - 1.5 |

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-11.0 | 27460202 |
| ECLASS-12.0 | 27460202 |
| ECLASS-13.0 | 27460202 |

### ETIM

| | |
|---|---|
| ETIM 8.0 | EC002638 |

### UNSPSC

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

## Environmental Product Compliance

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

## Accessories

### CP-DMC 1,5 NAT - Coding profile

1790647

https://www.phoenixcontact.com/pc/products/1790647



Coding profile, for insertion between the coding ribs of the connector and the header following the reflow soldering process, insulating material, color: natural

### SZS 0,4X2,5 VDE - Screwdriver

1205037

https://www.phoenixcontact.com/pc/products/1205037



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

## CRIMPFOX 6 - Crimping pliers

1212034

https://www.phoenixcontact.com/pc/products/1212034

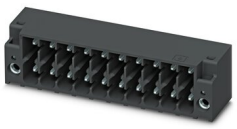


Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 $mm^2$ ... 6.0 $mm^2$, lateral entry, trapezoidal crimp

## DMC 1,5/ 6-G1F-3,5-LR P20THR - PCB header

1787056

https://www.phoenixcontact.com/pc/products/1787056

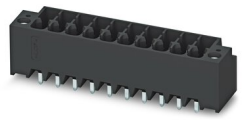


PCB headers, nominal cross section: 1.5 $mm^2$, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 2, number of positions: 6, number of connections: 12, product range: DMC 1,5/..-G1F-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON DFMC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: packed in cardboard

## DMCV 1,5/ 6-G1F-3,5-LR P20THR - PCB header

1787438

https://www.phoenixcontact.com/pc/products/1787438

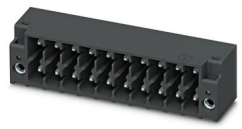


PCB headers, nominal cross section: 1.5 mm$^2$, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 2, number of positions: 6, number of connections: 12, product range: DMCV 1,5/..-G1F-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON DFMC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: packed in cardboard

## DMC 1,5/ 6-G1F-3,5-LRP20THRR56 - PCB header

1818546

https://www.phoenixcontact.com/pc/products/1818546



PCB headers, nominal cross section: 1.5 mm$^2$, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 2, number of positions: 6, number of connections: 12, product range: DMC 1,5/..-G1F-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON DFMC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: 56 mm wide tape

# DFMC 1,5/ 6-STF-3,5 - PCB connector

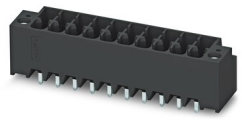
1790331

https://www.phoenixcontact.com/pc/products/1790331

## DMCV 1,5/ 6-G1F-3,5-LRP20THRR56 - PCB header

1818740

https://www.phoenixcontact.com/pc/products/1818740



PCB headers, nominal cross section: 1.5 mm$^2$, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 2, number of positions: 6, number of connections: 12, product range: DMCV 1,5/..-G1F-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON DFMC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: 56 mm wide tape

Phoenix Contact 2023 © - all rights reserved
https://www.phoenixcontact.com

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
D-32825 Blomberg
+49 (0) 5235-3 00
info@phoenixcontact.com