

## Feed-through header - DFK-MC 1,5/10-GF-3,81 - 1829413

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Feed-through header, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Solder/Slip-on connection, color: green, contact surface: Tin, mounting: Direct mounting, pin layout: Linear pinning, solder pin [P]: 9.4 mm

### Your advantages

- Free choice – permanent solder connection or standardized slip-on connection
- Cable connection on the inside of the device enables flexible positioning of the panel feed-through



### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 50 pc         |
| GTIN         |               |
| GTIN         | 4017918051099 |

### Technical data

#### Item properties

|                           |                           |
|---------------------------|---------------------------|
| Brief article description | Feed-through header       |
| Plug-in system            | MINI COMBICON             |
| Type of contact           | Male connector            |
| Range of articles         | DFK-MC 1,5/..-GF          |
| Pitch                     | 3.81 mm                   |
| Number of positions       | 10                        |
| Connection method         | Solder/Slip-on connection |
| Mounting type             | Direct mounting           |
| Pin layout                | Linear pinning            |
| Locking                   | Threaded flange           |
| Number of levels          | 1                         |
| Number of connections     | 10                        |
| Number of potentials      | 10                        |

#### Electrical parameters

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## Technical data

### Electrical parameters

|                                 |        |
|---------------------------------|--------|
| Nominal current                 | 8 A    |
| Nom. voltage                    | 160 V  |
| Max. current slip-on connection | 8 A    |
| Rated voltage                   | 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                   | Solder/Slip-on connection                    |
| pluggable                           | Yes  |
| Conductor cross section solid       | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section flexible    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG / kcmil | 28 ... 16                                    |

### 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                     | Tin-plated  |
| Metal surface contact area (top layer)      | Tin (5 - 7 µm Sn)   |
| Metal surface contact area (middle layer)   | Nickel (2 - 3 µm Ni),   |
| Metal surface soldering area (top layer)    | Tin (5 - 7 µm Sn)   |
| Metal surface soldering area (middle layer) | Nickel (2 - 3 µm Ni)  |

### Material data - housing

|  |              |
|--|--------------|
| Housing color                          | green (6021) |
| Insulating material                    | PA           |
| Insulating material group              | I            |
| CTI according to IEC 60112             | 600          |
| Flammability rating according to UL 94 | V0           |

### Dimensions for the product

|                                  |              |
|----------------------------------|--------------|
| Length [ l ]                     | 16.2 mm      |
| Width [ w ]                      | 52.49 mm     |
| Height [ h ]                     | 20.4 mm      |
| Pitch                            | 3.81 mm      |
| Height (without solder pin)      | 11 mm        |
| Solder pin [P]                   | 9.4 mm       |
| Pin dimensions                   | 0.8 x 2.8 mm |
| Dimensions of slip-on connection | 2,8 x 0,8 mm |

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## Technical data

### 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

|  |                     |
|--|---------------------|
| Test for conductor damage and slackening | IEC 60999-1:1999-11 |
|  | Test passed         |

### Pull-out test

|  |   |
|--|---|
| Pull-out test  | IEC 60999-1:1999-11                     |
|  | Test passed                             |
| Conductor cross section / conductor type / tensile force | 0.14 mm <sup>2</sup> / solid / > 7 N    |
|  | 0.14 mm <sup>2</sup> / flexible / > 7 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. | 7 N                    |
| Withdraw strength per pos. approx.  | 4 N                    |
| Polarization and coding             | IEC 60512-13-5:2006-02 |
| Contact holder in insert            | IEC 60512-15-1:2008-05 |
| Test force per pos.                 | 25.5 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              |

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## Technical data

### Current carrying capacity / derating curves

|                  |  |
|------------------|--|
| Caption          | Type: MC 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81 (with flat plug) |
| Specification    | IEC 61984:2008-10  |
| Reduction factor | 0.8  |
| Note             | Representation based on IEC 60512-5-2:2002-02                          |
|                  | For number of positions, see diagram                                   |

### Mechanical tests (A)

|  |             |
|--|-------------|
| Test specification                           | IEC 61984   |
| Insertion strength per pos. approx.          | 7 N         |
| Withdraw strength per pos. approx.           | 4 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 |
| Contact resistance R <sub>1</sub>            | 2.2 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Contact resistance R <sub>2</sub>            | 2.2 mΩ                |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Power-frequency withstand voltage            | 1.39 kV               |
| Insulation resistance, neighboring positions | 31 TΩ                 |

### Thermal tests (C)

|   |                       |
|---|-----------------------|
| Specification                                   | IEC 60512-5-1:2002-02 |
| Number of positions                             | 16                    |
| Conductor cross section                         | 1.5 mm <sup>2</sup>   |
| Test current                                    | 8 A DC                |
| 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 |

### Standards and Regulations

|                                  |        |
|----------------------------------|--------|
| Connection in acc. with standard | EN-VDE |
|                                  | CSA    |

# Feed-through header - DFK-MC 1,5/10-GF-3,81 - 1829413

## Technical data

### Standards and Regulations

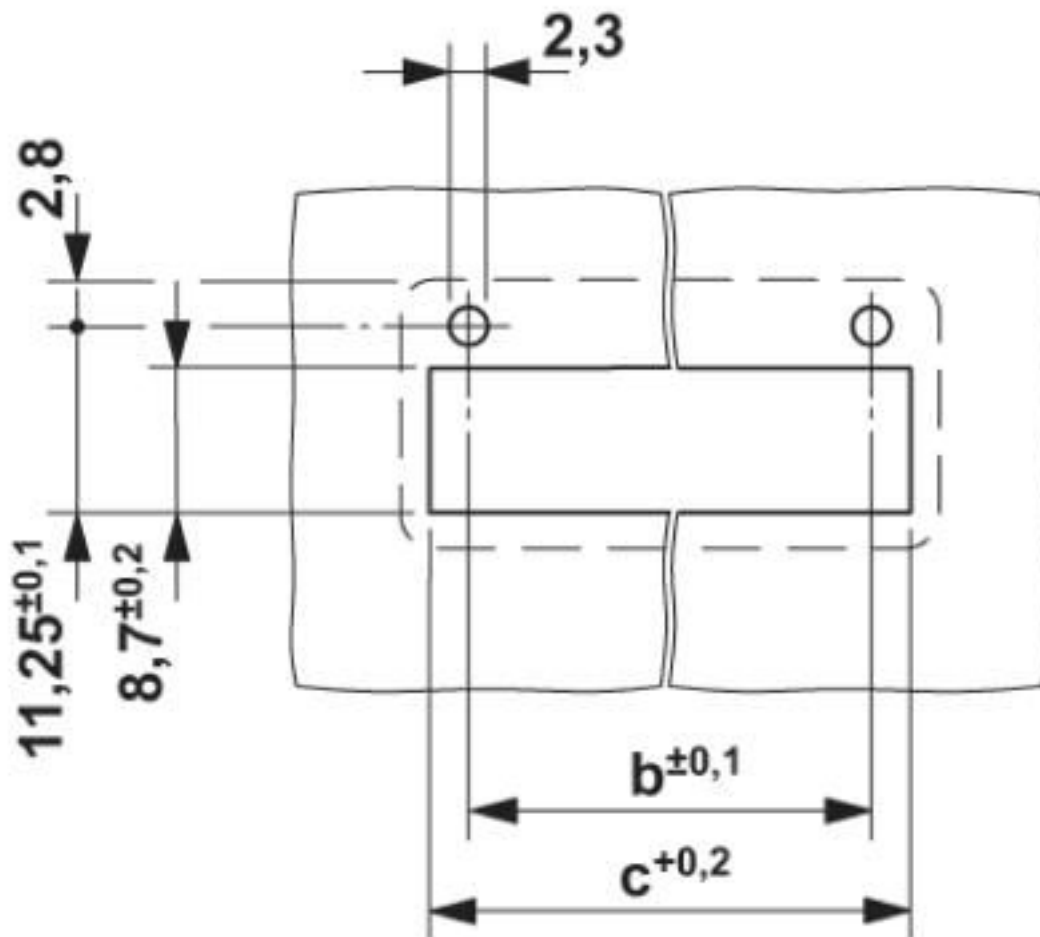
|  |    |
|--|----|
| Flammability rating according to UL 94 | V0 |
|--|----|

### Environmental Product Compliance

|            |   |
|------------|---|
| REACH SVHC | Lead 7439-92-1  |
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

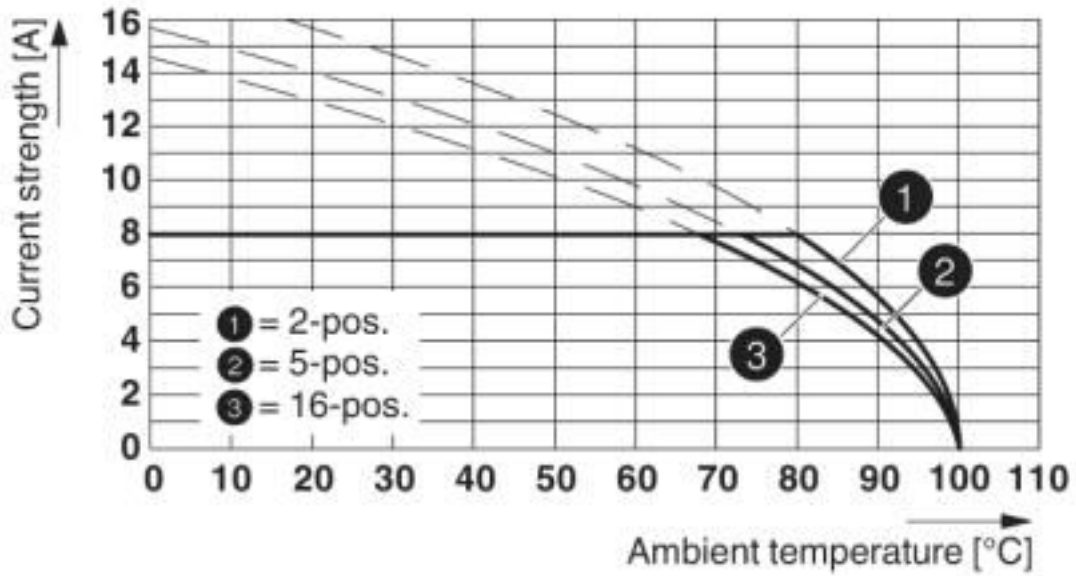
Drilling diagram



Dimension b: 6.19 mm + (no. of pos. x 3.81 mm)  
 Dimension c: Dim. b + 4.7 mm

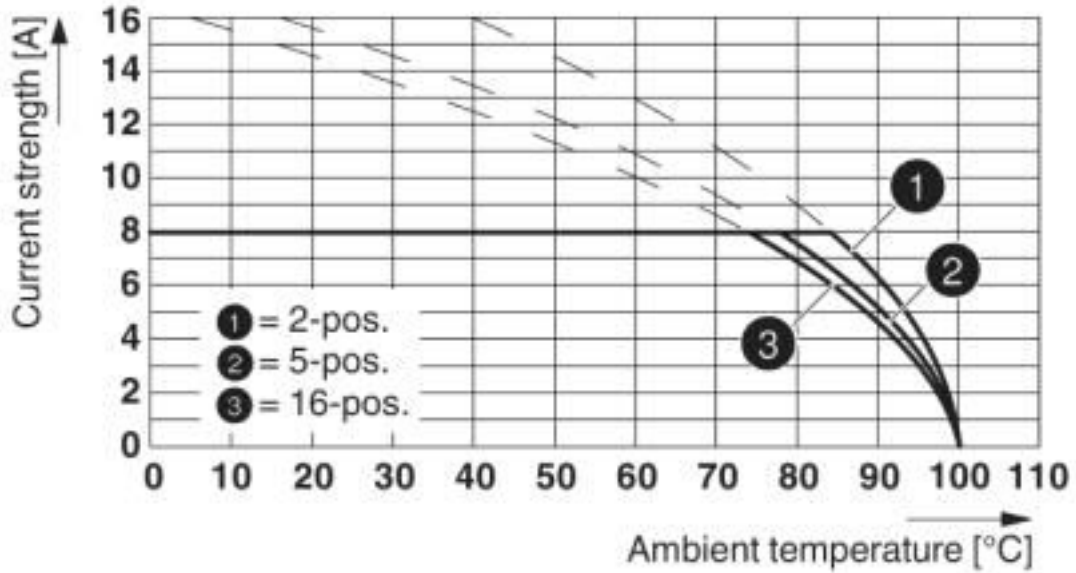
# Feed-through header - DFK-MC 1,5/10-GF-3,81 - 1829413

Diagram



Type: MC 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81 (with flat plug)

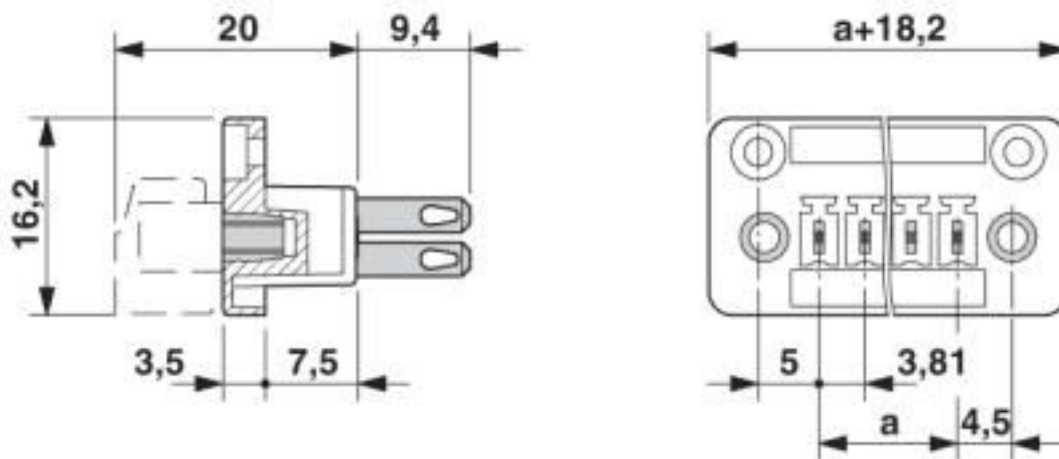
Diagram



Type: MC 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81 (with solder connection)

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Dimensional drawing



## Classifications

### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440402 |
| eCl@ss 4.0    | 27260700 |
| eCl@ss 4.1    | 27260700 |
| eCl@ss 5.0    | 27141100 |
| eCl@ss 5.1    | 27141100 |
| eCl@ss 6.0    | 27141100 |
| eCl@ss 7.0    | 27141134 |
| eCl@ss 8.0    | 27440402 |
| eCl@ss 9.0    | 27440402 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001283 |
| ETIM 4.0 | EC001283 |
| ETIM 5.0 | EC002637 |
| ETIM 6.0 | EC002637 |
| ETIM 7.0 | EC002637 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211810 |
| UNSPSC 7.0901 | 39121409 |
| UNSPSC 11     | 39121409 |
| UNSPSC 12.01  | 39121409 |
| UNSPSC 13.2   | 39121410 |
| UNSPSC 18.0   | 39121409 |
| UNSPSC 19.0   | 39121409 |
| UNSPSC 20.0   | 39121409 |

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## Classifications

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121409 |
|-------------|----------|

## Approvals


### Approvals


### Approvals


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

### Ex Approvals

## Approval details

|                    |  |   |       |
|--------------------|--|---|-------|
| CSA                |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 13631 |
| Nominal voltage UN |  | 150 V   |       |
| Nominal current IN |  | 8 A   |       |

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

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

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



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## Approvals

|                    |       |   |                 |
|--------------------|-------|---|-----------------|
| 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> | E60425-20110128 |
|                    | B     | D   |                 |
| Nominal voltage UN | 300 V | 300 V   |                 |
| Nominal current IN | 8 A   | 8 A   |                 |

## Accessories

### Accessories

#### Coding element

Coding profile - CP-MSTB - 1734634



Coding profile, is inserted into the slot on the plug or inverted header, red insulating material

#### Labeled terminal marker

Marker card - SK 3,81/2,8:FORTL.ZAHLEN - 0804109



Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 3.81 mm, lettering field size: 3.81 x 2.8 mm

#### Mounting material

Screw set - DFK-MC SS - 0710015



Screw set, for securing the header to the housing wall, consists of M2 x 8 screw, spring washer and nut, 1 piece each

#### Screwdriver tools

## Feed-through header - DFK-MC 1,5/10-GF-3,81 - 1829413

### Accessories

Screwdriver - SZS 0,4X2,5 VDE - 1205037



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

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### Additional products

Printed-circuit board connector - MCC 1/10-STZF-3,81 - 1852448



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Crimp connection, color: green, Corresponding female crimp contacts with current [A] and conductor cross section range [mm<sup>2</sup>] data: 5A/MCC-MT 0,2-0,35 (1859988); 8A/MCC-MT 0,5-1,0 (1859991)

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Printed-circuit board connector - QC 0,5/10-STF-3,81 - 1897623



PCB connector, nominal current: 6 A, rated voltage (III/2): 200 V, nominal cross section: 0.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Displacement connection, color: green, contact surface: Tin

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Printed-circuit board connector - FK-MCP 1,5/10-STF-3,81 - 1851313



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

---

Printed-circuit board connector - FRONT-MC 1,5/10-STF-3,81 - 1850932



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Front screw connection, color: green, contact surface: Tin

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## Feed-through header - DFK-MC 1,5/10-GF-3,81 - 1829413

### Accessories

#### Printed-circuit board connector - MCVW 1,5/10-STF-3,81 - 1828579



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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#### Printed-circuit board connector - MCVR 1,5/10-STF-3,81 - 1828427



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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#### Printed-circuit board connector - MC 1,5/10-STF-3,81 - 1827787



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 10, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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