

DMC 1,5/15-G1F-3,5-LR P20THR - PCB header



1787140

<https://www.phoenixcontact.com/de/produkte/1787140>

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PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 30, number of rows: 2, number of positions: 15, number of connections: 30, 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

Your advantages

- Designed for integration into the SMT soldering process
- Screwable flange for superior mechanical stability
- Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- Conductor connection on several levels enables higher contact density
- Small component size for applications where space is at a premium

Commercial Data

| | |
|--------------------------------------|---------------------------|
| Item number | 1787140 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales Key | E1 - Leiterplattenanschl. |
| Product Key | AABTJA |
| Catalog Page | Page 187 (C-1-2013) |
| GTIN | 4046356596756 |
| Weight per Piece (including packing) | 7,773 g |
| Weight per Piece (excluding packing) | 7,773 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

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Technical Data

Product properties

| | |
|---------------------------|--------------------------------|
| Type | Headers |
| Product line | COMBICON Connectors S |
| Product type | PCB headers |
| Product family | DMC 1,5/...-G1F-THR |
| Number of positions | 15 |
| Pitch | 3.5 mm |
| Number of connections | 30 |
| Number of rows | 2 |
| Mounting flange | Lock & release threaded flange |
| Number of potentials | 30 |
| Pin layout | Linear pinning |
| Solder pins per potential | 1 |

Electrical properties

| | |
|-----------------------------|--------|
| Nominal current I_N | 8 A |
| Nominal voltage U_N | 160 V |
| Degree of pollution | 3 |
| Contact resistance | 2 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 |
| | 250 V |
| Rated surge voltage (II/2) | 2.5 kV |

Mounting

| | |
|---------------|----------------|
| Mounting type | THR soldering |
| Pin layout | Linear pinning |

Flange

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

Processing notes

| | |
|----------------------------------|-----------------------|
| Process | Reflow/wave soldering |
| Moisture Sensitive Level | MSL 1 |
| Classification temperature T_c | 260 °C |
| Solder cycles in the reflow | 3 |

Material specifications

Material data - contact

| | |
|------|--|
| Note | WEEE/RoHS-compliant, free of whiskers according to IEC |
|------|--|

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| | |
|---|---------------------------|
| | 60068-2-82/JEDEC JESD 201 |
| Contact material | Cu alloy |
| Surface characteristics | Tin-plated |
| Metal surface contact area (top layer) | Tin (3 - 5 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1 - 3 µm Ni) |
| Metal surface soldering area (top layer) | Tin (3 - 5 µm Sn) |
| Metal surface soldering area (middle layer) | Nickel (1 - 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 () | () |
|----------|----|

Dimensions

| | |
|-----------------------|---------|
| Dimensional drawing | |
| Pitch | 3.5 mm |
| Width [w] | 59.5 mm |
| Height [h] | 12.8 mm |
| Length [l] | 11.6 mm |
| Installed height | 10.8 mm |
| Solder pin length [P] | 2 mm |

PCB design

| | |
|-------------|---------|
| Pin spacing | 2.50 mm |
|-------------|---------|

Mechanical tests

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

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| | |
|---|---|
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.2 mm ² / solid / > 10 N |
| | 0.2 mm ² / flexible / > 10 N |
| | 1.5 mm ² / solid / > 40 N |
| | 1.5 mm ² / 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 |

Contact holder in insert

| | |
|---|------------------------|
| Specification | IEC 60512-15-1:2008-05 |
| Contact holder in insert Requirements >20 N | Test passed |

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 |

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 | IIIa |

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| | |
|--|---------|
| Comparative tracking index (IEC 60112) | CTI 175 |
| 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) | 2.5 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) | 250 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) | 2.5 mm |

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 | 50 m/s ² (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 mΩ |
| Contact resistance R ₂ | 2.3 mΩ |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 MΩ |

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 | 105 °C/168 h |
| Power-frequency withstand voltage | 1.39 kV |

Ambient conditions

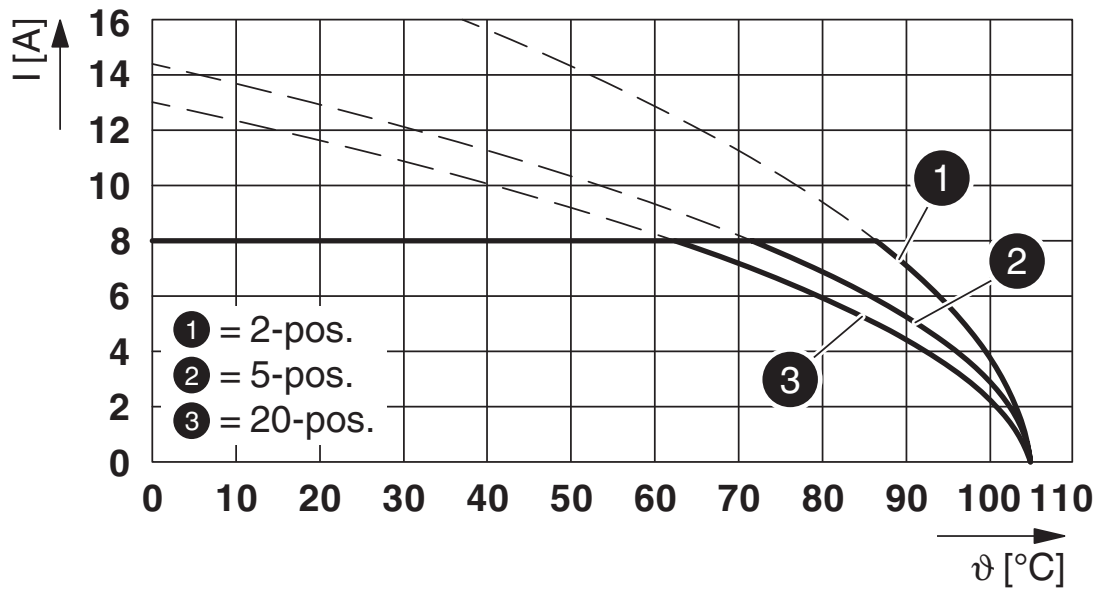
| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |

Packaging specifications

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

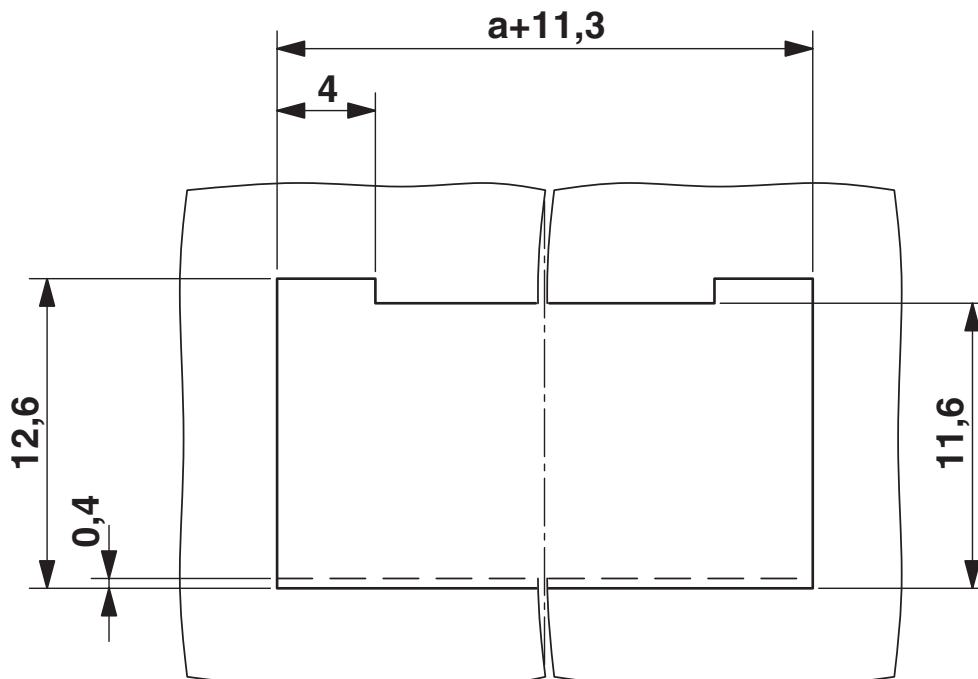
Drawings

Diagram



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

Schematic diagram

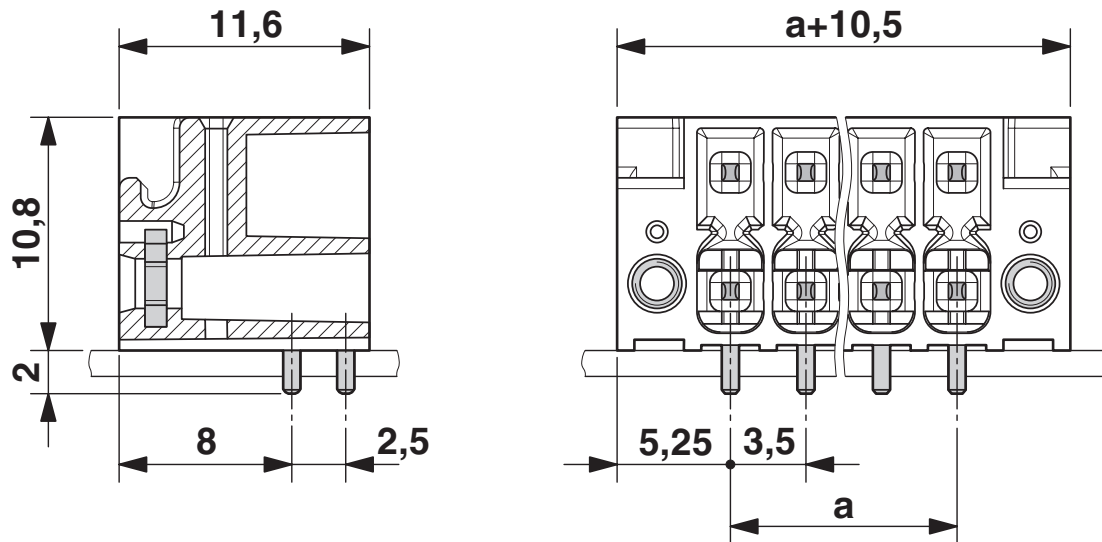


Panel cutout

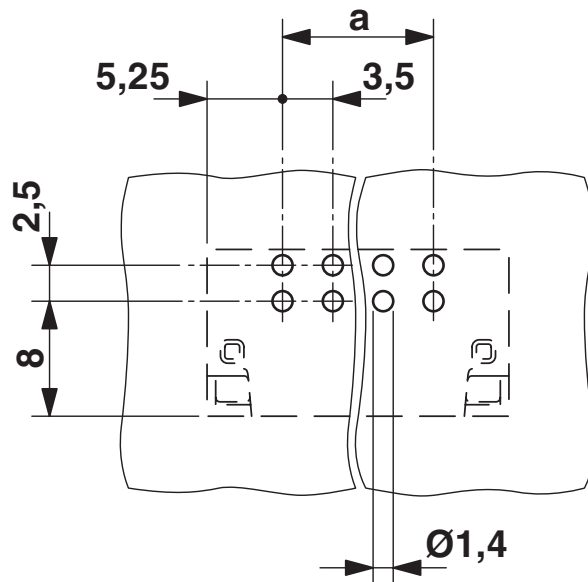
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Dimensional drawing



Drilling plan/solder pad geometry

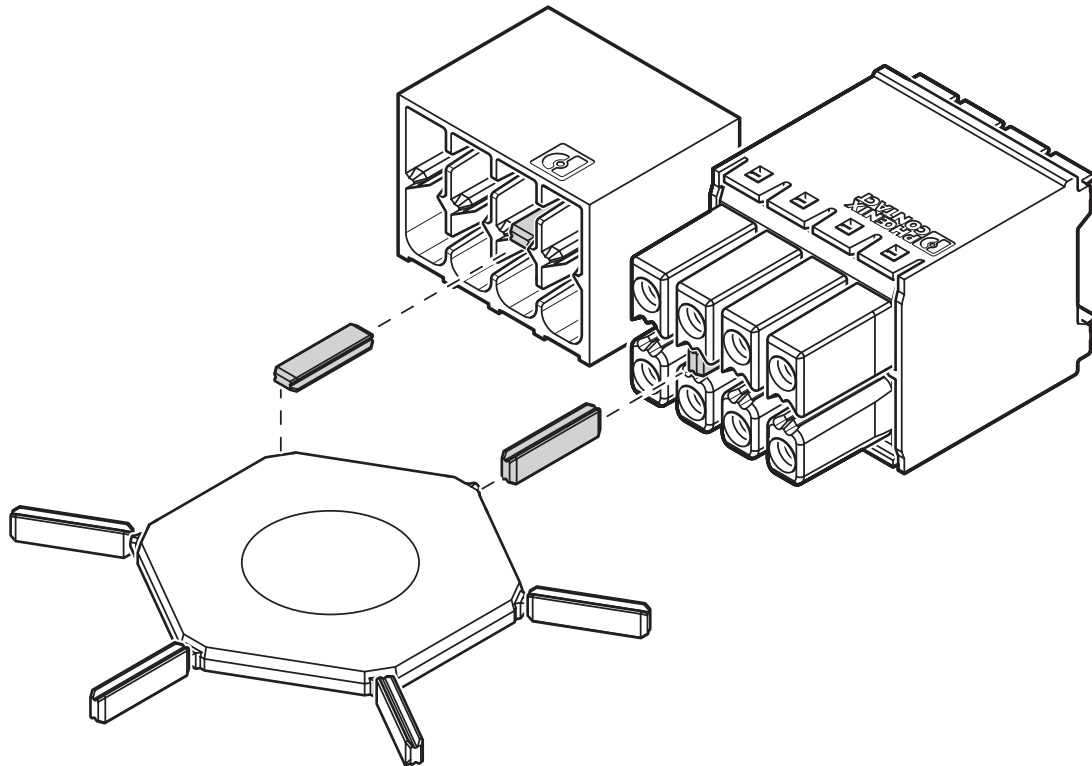


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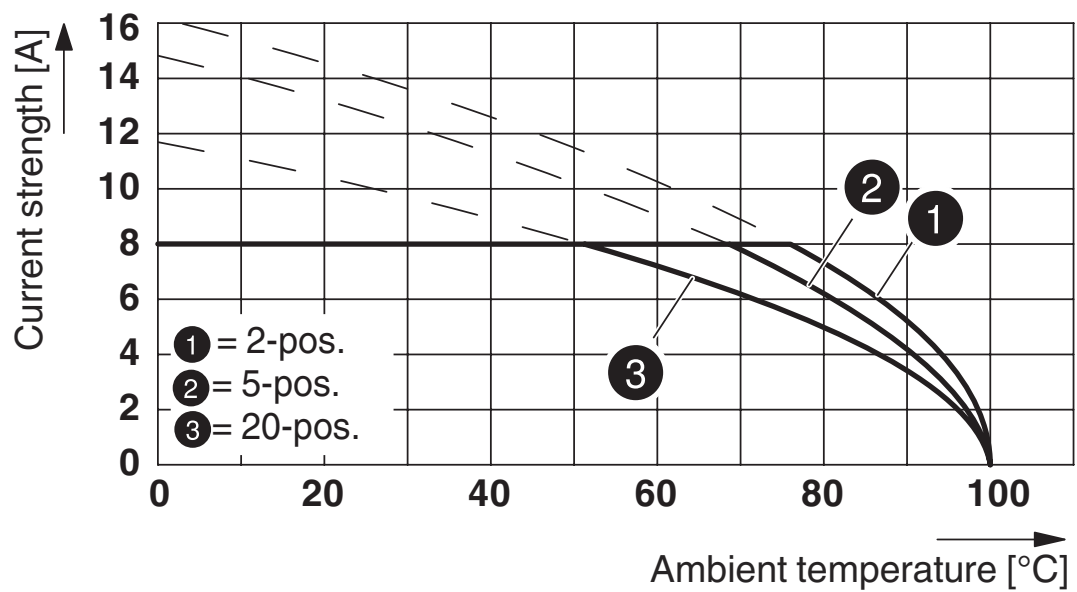
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Schematic diagram



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

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Approvals

|  IECEE CB Scheme Approval ID: DE1-60359-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: E60425-20110128 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
| Use group B | 150 V | 8 A | - | - |
| Use group C | 50 V | 8 A | - | - |
| Use group D | 300 V | 8 A | - | - |

|  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 | - | - |

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Classifications

ECLASS

| | |
|---------------|----------|
| ECLASS-9.0 | 27440402 |
| ECLASS-10.0.1 | 27440402 |
| ECLASS-11.0 | 27460201 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC002637 |
|----------|----------|

UNSPSC

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

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Environmental Product Compliance

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

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Accessories

CP-DMC 1,5 NAT - Coding profile

1790647

<https://www.phoenixcontact.com/de/produkte/1790647>

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

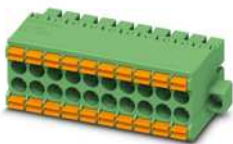


DFMC 1,5/15-STF-3,5 - PCB connector

1790425

<https://www.phoenixcontact.com/de/produkte/1790425>

Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 15 with 30 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin



DMC 1,5/15-G1F-3,5-LR P20THR - PCB header

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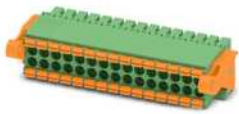


DFMC 1,5/15-ST-3,5-LR - PCB connector

1790616

<https://www.phoenixcontact.com/de/produkte/1790616>

Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 15 with 30 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin



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