

# PCB header - MCV 1,5/ 6-G-3,5



1843648

<https://www.phoenixcontact.com/il/products/1843648>

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PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: MCV 1,5/..-G, pitch: 3.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Vertical connection enables multi-row arrangement on the PCB
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

## Commercial Data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1843648             |
| Packing unit                         | 100 pc              |
| Minimum order quantity               | 100 pc              |
| Product Key                          | AABSAE              |
| Catalog Page                         | Page 226 (C-1-2013) |
| GTIN                                 | 4017918112790       |
| Weight per Piece (including packing) | 1.629 g             |
| Weight per Piece (excluding packing) | 1.629 g             |
| Customs tariff number                | 85366930            |
| Country of origin                    | DE                  |

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## Technical Data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Type                      | Standard              |
| Product line              | COMBICON Connectors S |
| Product type              | PCB headers           |
|                           | MCV 1,5/..-G          |
| Number of positions       | 6                     |
| Pitch                     | 3.5 mm                |
| Number of connections     | 6                     |
| Number of rows            | 1                     |
| Mounting flange           | without               |
| Number of potentials      | 6                     |
| 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          | 1.8 m $\Omega$ |
| 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         |

### Mounting

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

### 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                     | Tin-plated   |
| Metal surface contact area (top layer)      | Tin (3 - 5 $\mu\text{m}$ Sn)   |
| Metal surface contact area (middle layer)   | Nickel (1 - 3 $\mu\text{m}$ Ni)  |
| Metal surface soldering area (top layer)    | Tin (3 - 5 $\mu\text{m}$ Sn)   |
| Metal surface soldering area (middle layer) | Nickel (1 - 3 $\mu\text{m}$ Ni)  |

#### Material data - housing

|                     |              |
|---------------------|--------------|
| Color (Housing)     | green (6021) |
| Insulating material | PBT          |

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1843648

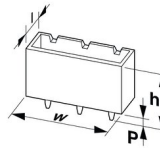
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|  |      |
|--|------|
| Insulating material group              | IIIa |
| CTI according to IEC 60112             | 225  |
| Flammability rating according to UL 94 | V0   |

## Material data – actuating element

|           |     |
|-----------|-----|
| Color ( ) | ( ) |
|-----------|-----|

## Dimensions

|                       |  |
|-----------------------|--|
| Dimensional drawing   |  |
| Pitch                 | 3.5 mm   |
| Width [w]             | 22.4 mm  |
| Height [h]            | 12.6 mm  |
| Length [l]            | 7.25 mm  |
| Installed height      | 9.2 mm   |
| Solder pin length [P] | 3.4 mm   |

## Mechanical tests

### Test for conductor damage and slackening

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

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 6 N         |
| Withdraw strength per pos. approx.  | 4 N         |

### Torque test

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
|---------------|---------------------|

### Contact holder in insert

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

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1843648

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## 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                |

### Air clearances and creepage distances |

|  |                     |
|--|---------------------|
| Specification  | IEC 60664-1:2007-04 |
| Insulating material group                              | IIIa                |
| Comparative tracking index (IEC 60112)                 | CTI 225             |
| 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 |
|---------------|-----------------------|

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|                        |                             |
|------------------------|-----------------------------|
| 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 60512-5:1992-08 |
| Impulse withstand voltage at sea level | 2.95 kV             |
| Contact resistance R <sub>1</sub>      | 1.8 mΩ              |
| Contact resistance R <sub>2</sub>      | 2.2 mΩ              |
| Insertion/withdrawal cycles            | 25                  |

## Climatic test

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

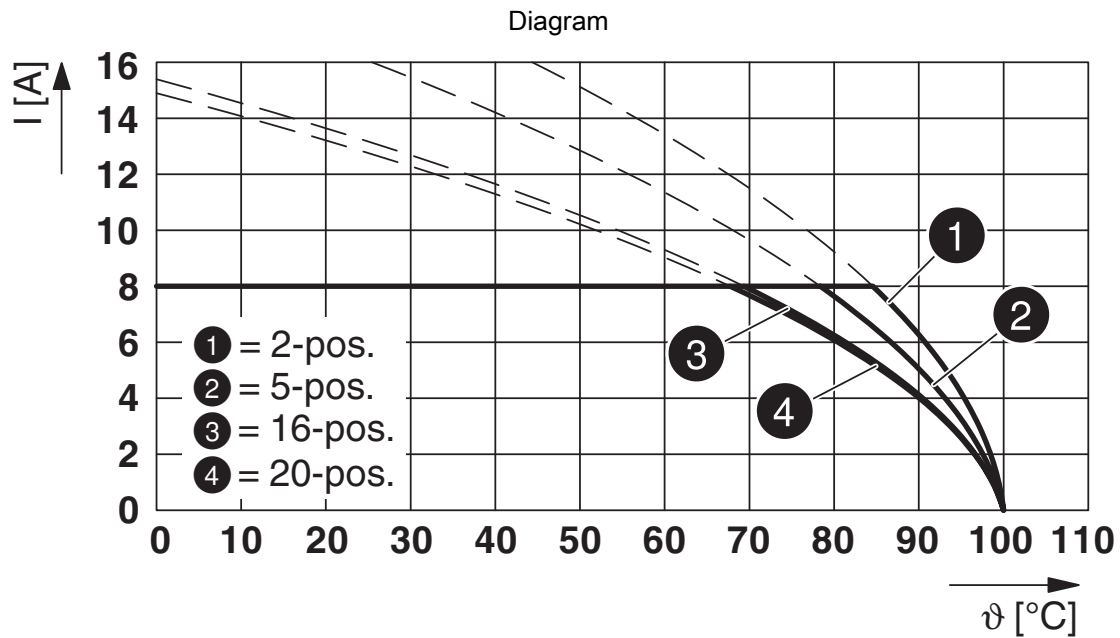
## Ambient conditions

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

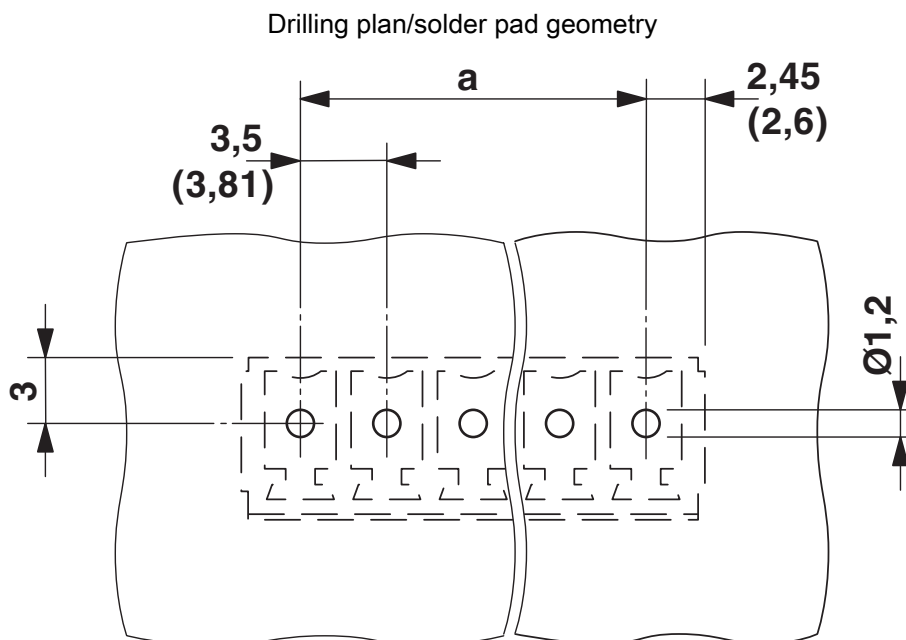
## Packaging specifications

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

## Drawings



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

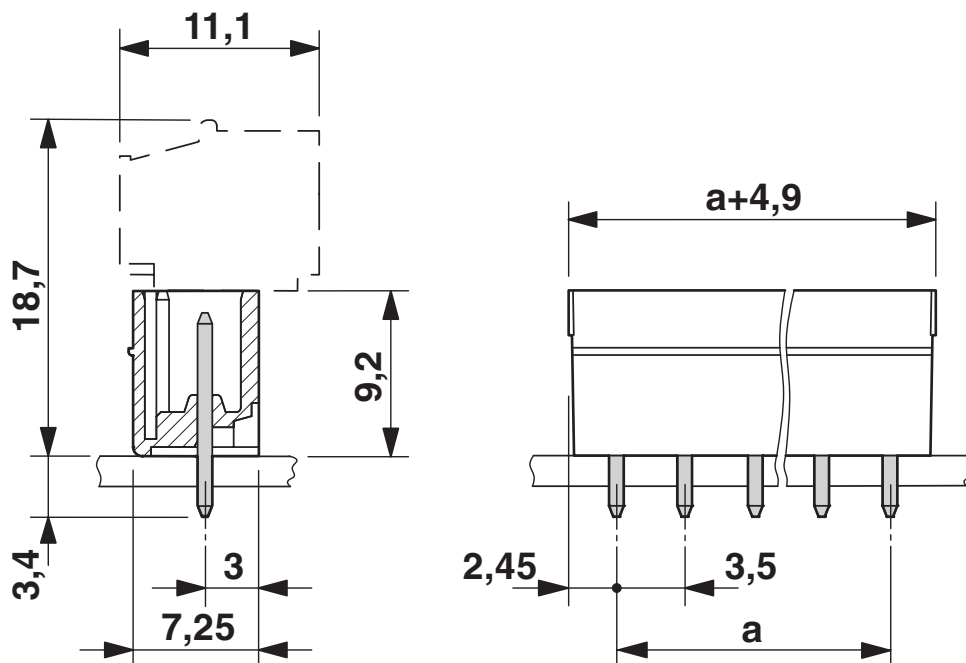


# PCB header - MCV 1,5/ 6-G-3,5

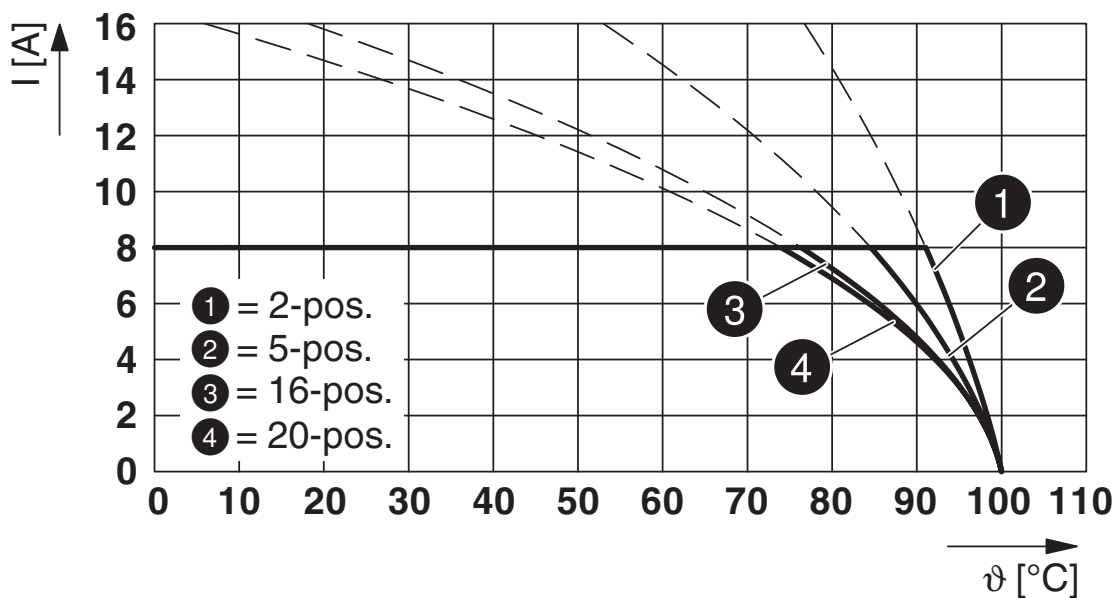
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Dimensional drawing



Diagram

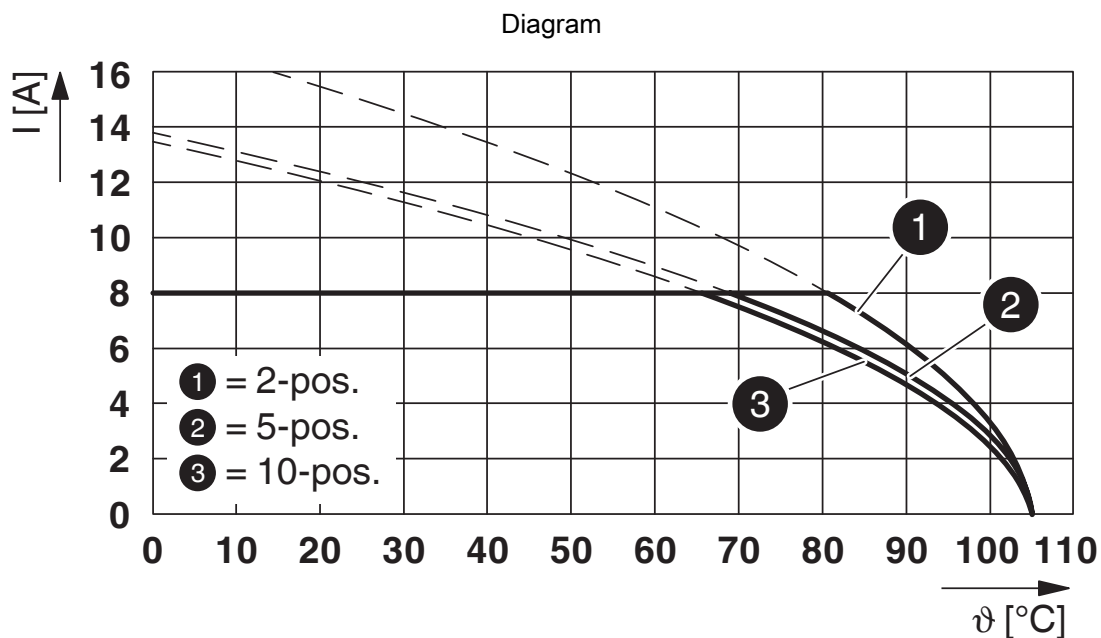


Type: FK-MCP 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5

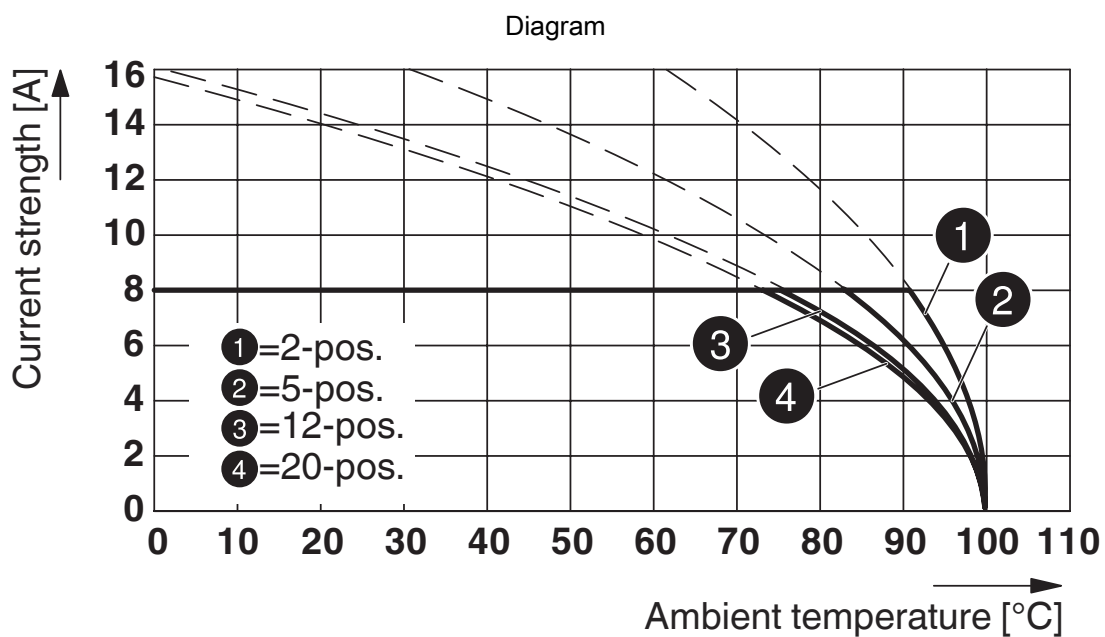
# PCB header - MCV 1,5/ 6-G-3,5

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



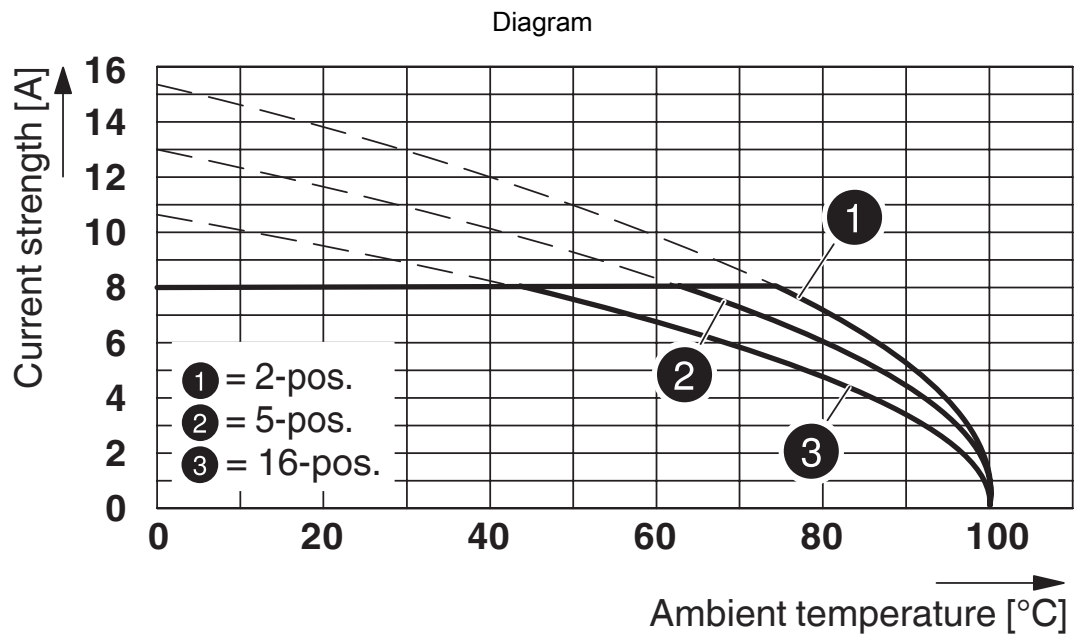
Type: MC 1,5/...-ST-3,5 with MCV 1,5/....-G-3,5



# PCB header - MCV 1,5/ 6-G-3,5

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


# PCB header - MCV 1,5/ 6-G-3,5



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## Approvals

|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
| Use group B  | 300 V                 | 8 A                   | -                 | -                           |
| Use group D  | 300 V                 | 8 A                   | -                 | -                           |

|  <b>IECEE CB Scheme</b><br>Approval ID: DE1-60987-B1B2 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
|   | 160 V                 | 8 A                   | -                 | -                           |

|  <b>EAC</b><br>Approval ID: B.01687 |  |  |  |  |
|--|--|--|--|--|
|--|--|--|--|--|

|  <b>cULus Recognized</b><br>Approval ID: E60425-20110128 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
| Use group B   | 300 V                 | 8 A                   | -                 | -                           |
| Use group D   | 300 V                 | 8 A                   | -                 | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40011723 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
|  | 160 V                 | 8 A                   | -                 | -                           |

# PCB header - MCV 1,5/ 6-G-3,5



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

# PCB header - MCV 1,5/ 6-G-3,5

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## Environmental Product Compliance

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

# PCB header - MCV 1,5/ 6-G-3,5

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## Accessories

### Marker card

Marker card - SK U/2,8 WH:UNBEDRUCKT - 0803883

<https://www.phoenixcontact.com/il/products/0803883>



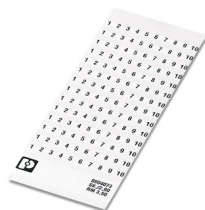
Marker card, Sheet, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, Office printing systems, mounting type: adhesive, for terminal block width: 210 mm, lettering field size: 186 x 2.8 mm, Number of individual labels: 3600

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### Marker card

Marker card - SK 3,5/2,8:FORTL.ZAHLEN - 0804073

<https://www.phoenixcontact.com/il/products/0804073>



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 99, mounting type: adhesive, for terminal block width: 3.5 mm, lettering field size: 3.5 x 2.8 mm

# PCB header - MCV 1,5/ 6-G-3,5

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## Coding profile

Coding profile - CP-MSTB - 1734634

<https://www.phoenixcontact.com/il/products/1734634>

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



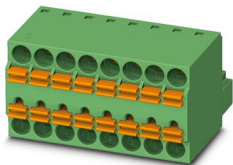
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## Printed-circuit board connector

Printed-circuit board connector - TFMC 1,5/ 6-ST-3,5 - 1772650

<https://www.phoenixcontact.com/il/products/1772650>

PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 12, product range: TFMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard



# PCB header - MCV 1,5/ 6-G-3,5

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## PCB connector

PCB connector - MC 1,5/ 6-ST-3,5 - 1840405

<https://www.phoenixcontact.com/il/products/1840405>



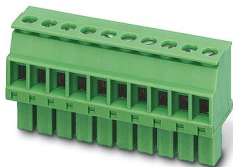
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: MC 1,5/...-ST, pitch: 3.5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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## PCB connector

PCB connector - MCVW 1,5/ 6-ST-3,5 - 1862894

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PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: MCVW 1,5/...-ST, pitch: 3.5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -90 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

# PCB header - MCV 1,5/ 6-G-3,5

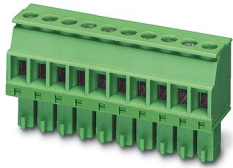
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<https://www.phoenixcontact.com/il/products/1843648>

## PCB connector

PCB connector - MCVR 1,5/ 6-ST-3,5 - 1863194

<https://www.phoenixcontact.com/il/products/1863194>



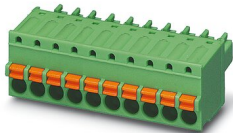
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: MCVR 1,5/...-ST, pitch: 3.5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 90 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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## PCB connector

PCB connector - FK-MCP 1,5/ 6-ST-3,5 - 1939950

<https://www.phoenixcontact.com/il/products/1939950>



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: FK-MCP 1,5/...-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard



# PCB header - MCV 1,5/ 6-G-3,5

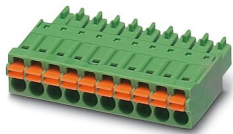
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## Printed-circuit board connector

Printed-circuit board connector - FMC 1,5/ 6-ST-3,5 - 1952306

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PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: FMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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