

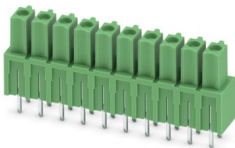
# IMCV 1,5/10-G-3,81 - PCB header

1875506

<https://www.phoenixcontact.com/us/products/1875506>



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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: Sn, contact connection type: Socket, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: IMCV 1,5/..-G, pitch: 3.81 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, number of solder pins per potential: 2, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting method: 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
- Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1875506             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 50 pc               |
| Sales key                            | AA02                |
| Product key                          | AABSIB              |
| Catalog page                         | Page 239 (C-1-2013) |
| GTIN                                 | 4017918134006       |
| Weight per piece (including packing) | 3.774 g             |
| Weight per piece (excluding packing) | 3.322 g             |
| Customs tariff number                | 85366930            |
| Country of origin                    | PL                  |

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## Technical data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Product type              | PCB headers           |
| Product family            | IMCV 1,5/...-G        |
| Product line              | COMBICON Connectors S |
| Type                      | Inverted              |
| Number of positions       | 10                    |
| Pitch                     | 3.81 mm               |
| Number of connections     | 10                    |
| Number of rows            | 1                     |
| Number of potentials      | 10                    |
| Mounting flange           | without               |
| Pin layout                | Linear pinning        |
| Solder pins per potential | 2                     |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 8 A    |
| Nominal voltage $U_N$       | 160 V  |
| Contact resistance          | 2.2 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 |
| Rated voltage (II/2)        | 320 V  |
| Rated surge voltage (II/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                  | hot-dip tin-plated                                                               |
| Metal surface contact area (top layer)   | Tin (4 - 8 μm Sn)                                                                |
| Metal surface soldering area (top layer) | Tin (4 - 8 μm Sn)                                                                |

#### Material data - housing

|                 |              |
|-----------------|--------------|
| Color (Housing) | green (6021) |
|-----------------|--------------|

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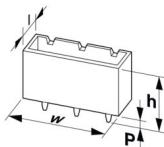


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|                                                                   |        |
|-------------------------------------------------------------------|--------|
| Insulating material                                               | PA     |
| Insulating 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 |

## Dimensions

|                       |                                                                                    |
|-----------------------|------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 3.81 mm                                                                            |
| Width [w]             | 38.89 mm                                                                           |
| Height [h]            | 18 mm                                                                              |
| Length [l]            | 6.85 mm                                                                            |
| Installed height      | 14.5 mm                                                                            |
| Solder pin length [P] | 3.5 mm                                                                             |
| Pin dimensions        | 0.62 x 1.12 mm                                                                     |
| PCB design            |                                                                                    |
| Pin spacing           | 3.81 mm                                                                            |
| Hole diameter         | 1.2 mm                                                                             |

## Mechanical tests

|                            |                        |
|----------------------------|------------------------|
| Visual inspection          |                        |
| Specification              | IEC 60512-1-1:2002-02  |
| Result                     | Test passed            |
| Dimension check            |                        |
| Specification              | IEC 60512-1-2:2002-02  |
| Result                     | 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            |
| Contact holder in insert   |                        |

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

## Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 7 N         |
| Withdraw strength per pos. approx.  | 3 N         |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 16                    |

### 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                              | 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              |

## 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) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |
| Test directions        | X-, Y- and Z-axis           |

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## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance R <sub>1</sub>            | 2.2 mΩ                |
| Contact resistance R <sub>2</sub>            | 2.6 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

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

## Ambient conditions

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 105 °C (Depending on the current carrying capacity/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 |
|-------------------|---------------------|

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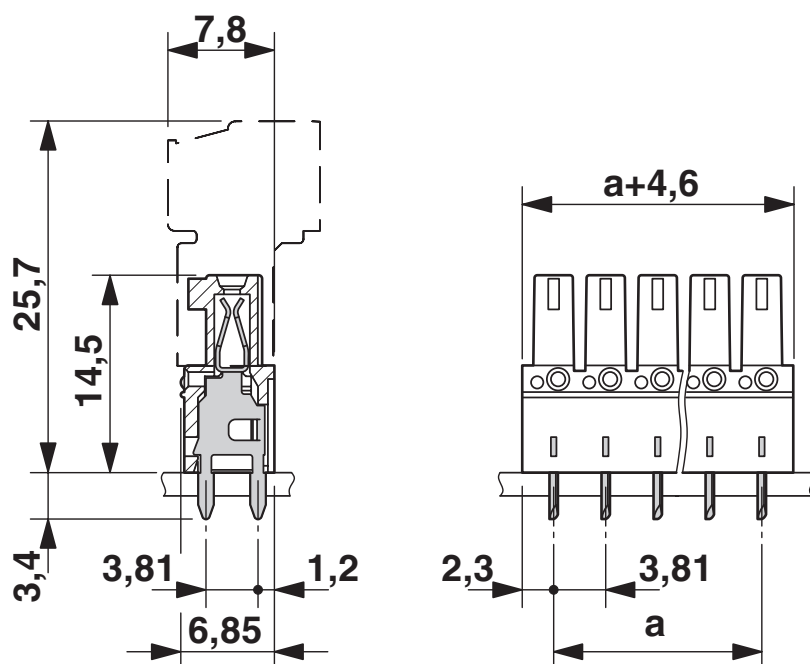
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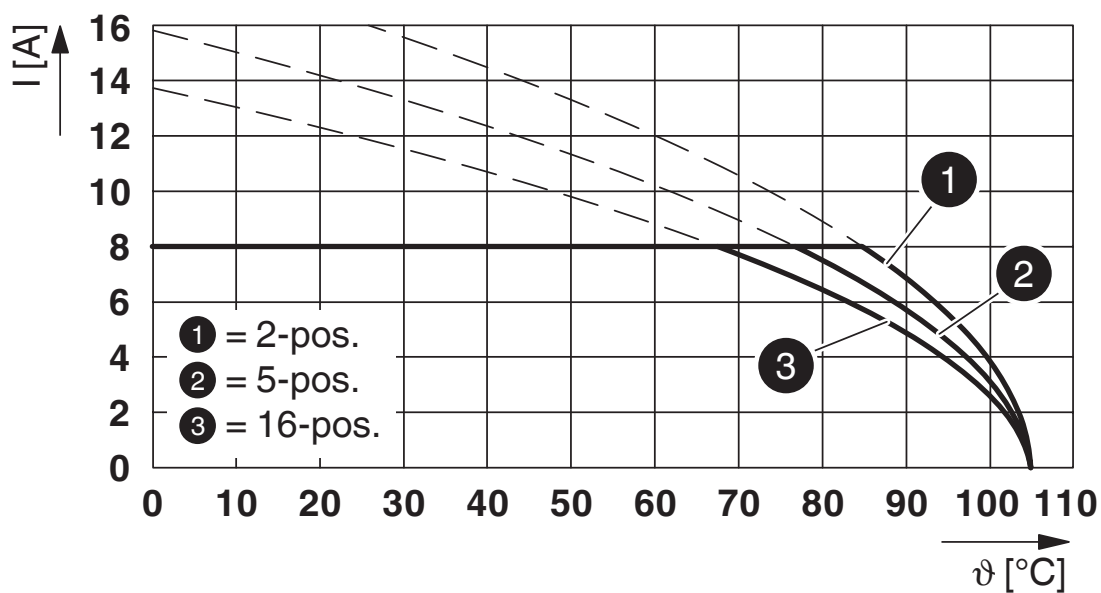


## Drawings

Dimensional drawing



Diagram



Type: IMC 1,5/...-ST-3,81 with IMCV 1,5/...-G-3,81

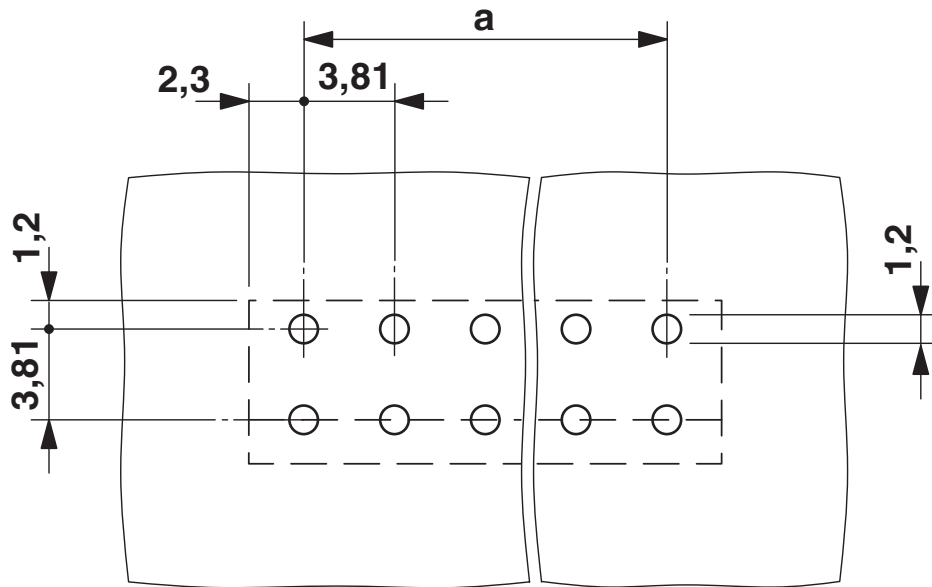
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Drilling plan/solder pad geometry



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1875506>

|                                                                                                                                                       |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <div> <b>cULus Recognized</b><br/>Approval ID: E60425-20110128</div> |                       |                       |                   |                             |
|                                                                                                                                                       | 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                   | -                 | -                           |
|                                                                                                                                                       |                       |                       |                   |                             |

|                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div> <b>VDE approval of drawings</b><br/>Approval ID: 40011723</div> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                          |
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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| EU RoHS                                 |                                          |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                       |
| China RoHS                              |                                          |
| Environment friendly use period (EFUP)  | EFUP-E                                   |
|                                         | No hazardous substances above the limits |
| EU REACH SVHC                           |                                          |
| REACH candidate substance (CAS No.)     | No substance above 0.1 wt%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 0.038 kg CO2e                            |

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)