

# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header



2278380  
<https://www.phoenixcontact.com/nz/products/2278380>

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PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: light grey, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MCO 1,5/-G1L, pitch: 3.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, locking: without, type of packaging: packed in cardboard, Product with pin output on left side

## Your advantages

- Plug-in direction orthogonal to the PCB

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2278380             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 50 pc               |
| Sales key                            | ACHADB              |
| Product key                          | ACHADB              |
| Catalog page                         | Page 232 (C-1-2013) |
| GTIN                                 | 4046356293006       |
| Weight per piece (including packing) | 3.41 g              |
| Weight per piece (excluding packing) | 2.8 g               |
| Country of origin                    | PL                  |

# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header



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## Technical data

### Product properties

|                       |                                 |
|-----------------------|---------------------------------|
| Type                  | Header perpendicular to the PCB |
| Product type          | PCB headers                     |
| Product family        | MCO 1,5/...-G1L                 |
| Number of positions   | 5                               |
| Pitch                 | 3.5 mm                          |
| Number of connections | 5                               |
| Number of rows        | 1                               |
| Mounting flange       | without                         |
| Number of potentials  | 5                               |
| Pin layout            | Linear pinning                  |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 8 A    |
| Nominal voltage $U_N$       | 160 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 1.6 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

|                         |            |
|-------------------------|------------|
| Contact material        | Cu alloy   |
| Surface characteristics | tin-plated |

#### Material data - housing

|                                                                |                   |
|----------------------------------------------------------------|-------------------|
| Color (Housing)                                                | light grey (7035) |
| 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               |

# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header



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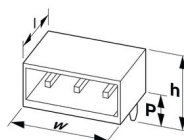
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Temperature for the ball pressure test according to EN 60695-10-2

125 °C

## Dimensions

Dimensional drawing



Pitch

3.5 mm

Width [w]

19.95 mm

Height [h]

17.8 mm

Length [l]

14.55 mm

Solder pin length [P]

2 mm

Pin dimensions

0.8 x 0.8 mm

## PCB design

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

Specification

IEC 60512-15-1:2008-05

Contact holder in insert  
Requirements >20 N

Test passed

### Insertion and withdrawal forces

Result

Test passed

No. of cycles

25

Insertion strength per pos. approx.

8 N

Withdraw strength per pos. approx.

4 N

## Electrical tests

### Thermal test | Test group C

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

### Insulation resistance

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

### Air clearances and creepage distances |

|                                                        |        |
|--------------------------------------------------------|--------|
| Insulating material group                              | I      |
| 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)                      | 0.8 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) |
| 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 <sub>1</sub>            | 1.6 mΩ                |
| Contact resistance R <sub>2</sub>            | 1.6 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 |

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

## Ambient conditions

|                                         |                                                     |
|-----------------------------------------|-----------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 105 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 55 °C                                    |
| Relative humidity (storage/transport)   | 30 % ... 70 %                                       |
| Ambient temperature (assembly)          | -5 °C ... 100 °C                                    |

## Packaging specifications

|                      |                     |
|----------------------|---------------------|
| Type of packaging    | packed in cardboard |
| Outer packaging type | Carton              |

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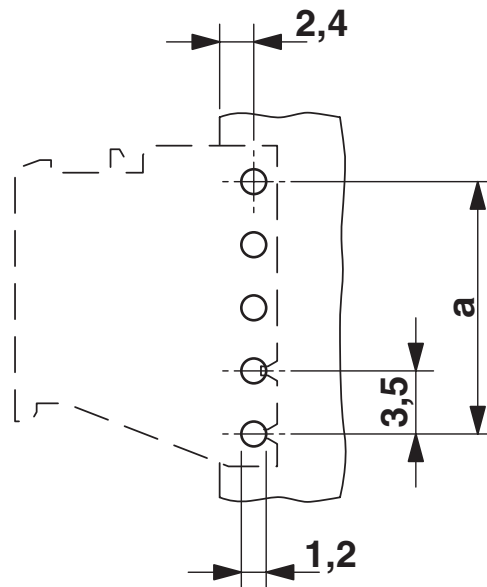
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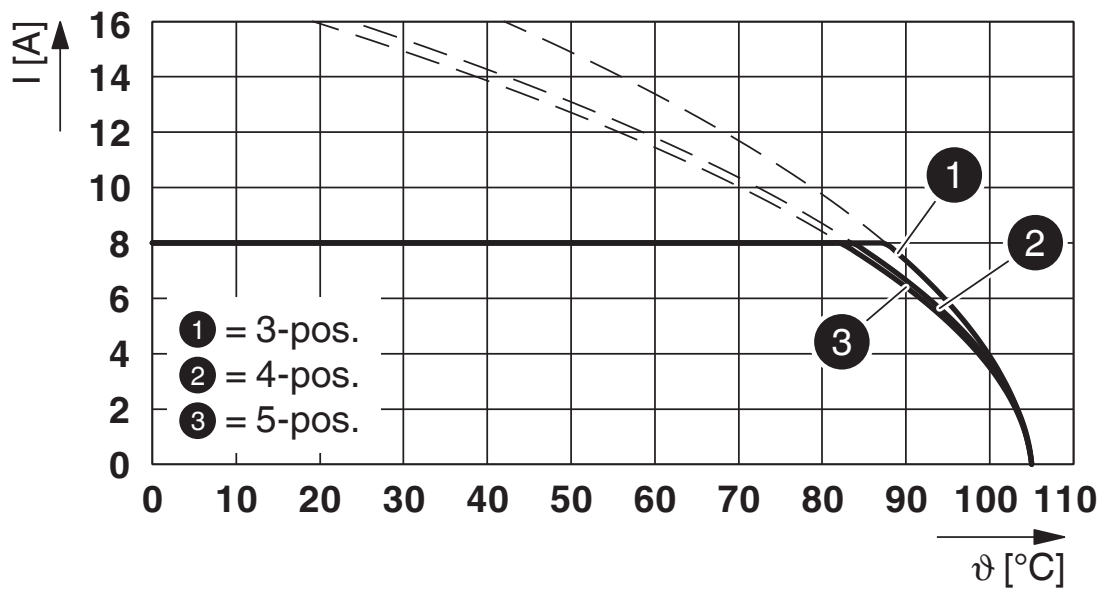


## Drawings

Drilling plan/solder pad geometry



Diagram

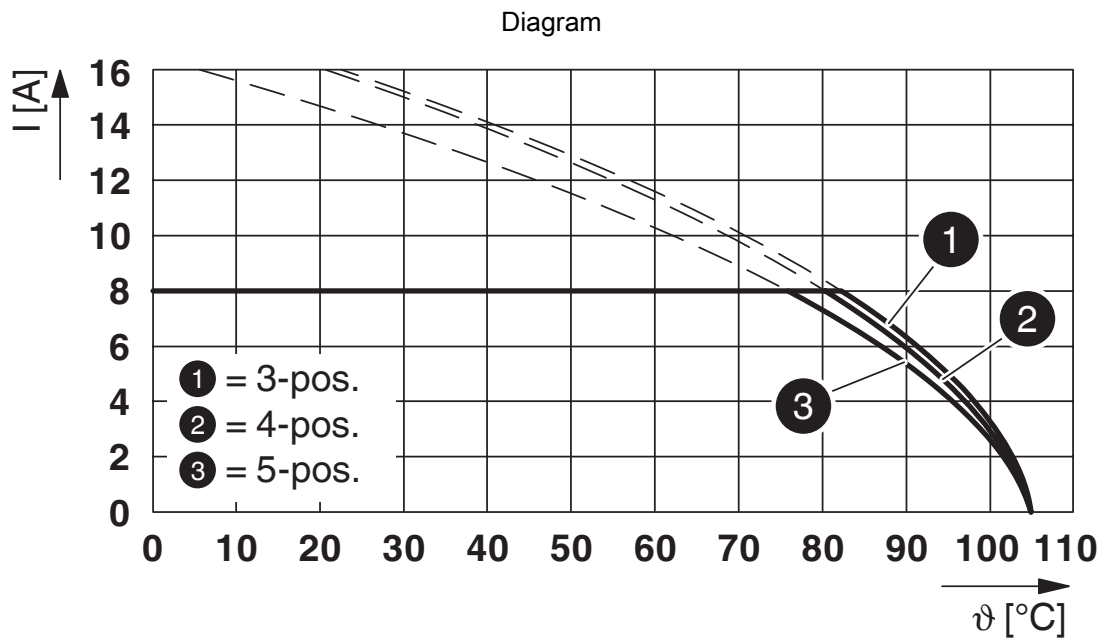


Type: MC 1,5/...-ST-3,5 with MCO 1,5/...-G1L(R)-3,5 KMGY

# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header

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Type: FMC 1.5/...-ST-3.5 with MCO 1.5/...-G1L-3.5 KMGY

# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/nz/products/2278380>

|                                                                                                                                                       |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <div> <b>cULus Recognized</b><br/>Approval ID: E60425-20050718</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                   | -                 | -                           |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460201 |
| ECLASS-12.0 | 27460201 |
| ECLASS-13.0 | 27460201 |

### ETIM

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