

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



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	AC08
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
Customs tariff number	85366930
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

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Temperature for the ball pressure test according to EN 60695-10-2	125 °C
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## 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
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## 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

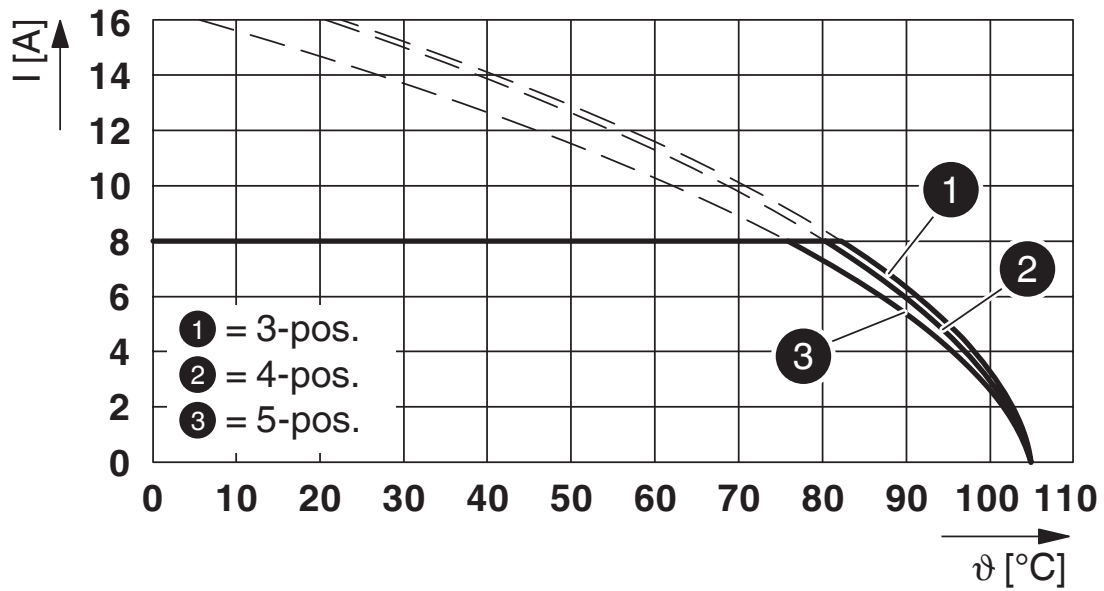
Ambient temperature (operation)	-40 °C ... 105 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 55 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
Outer packaging type	Carton

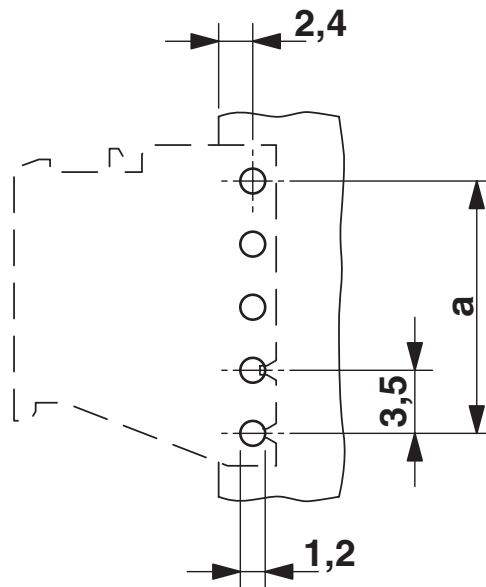
## Drawings

Diagram



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

Drilling plan/solder pad geometry

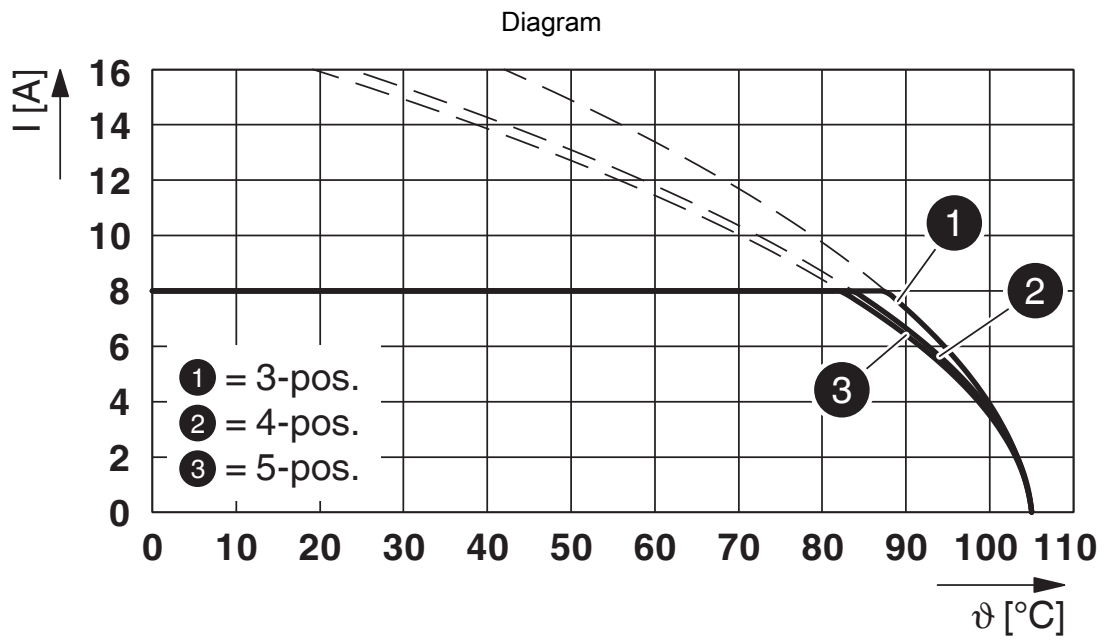


# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header



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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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## Approvals

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

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



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



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## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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# MCO 1,5/ 5-G1L-3,5 KMGY - PCB header



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## Environmental product compliance

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

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

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## Mandatory accessories

### MC 1,5/ 5-ST-3,5 GY7035 - PCB connector

1769087

<https://www.phoenixcontact.com/us/products/1769087>



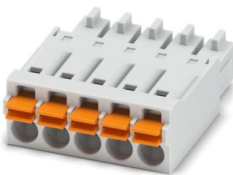
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: light grey, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MC 1,5/...-ST,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

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### FMC 1,5/ 5-ST-3,5 GY7035 - Printed-circuit board connector

1773581

<https://www.phoenixcontact.com/us/products/1773581>



PCB connector, 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: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

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## FK-MCP 1,5/ 5-ST-3,5 GY7035 - PCB connector

1773604

<https://www.phoenixcontact.com/us/products/1773604>



PCB connector, 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: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: FK-MCP 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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## Accessories

### CP-MSTB - Coding profile

1734634

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

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



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## MC 1,5/ 5-ST-3,5 GY7035 - PCB connector

1769087

<https://www.phoenixcontact.com/us/products/1769087>



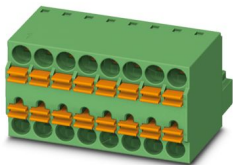
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: light grey, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MC 1,5/...-ST,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

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

1772647

<https://www.phoenixcontact.com/us/products/1772647>



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, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 10, 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

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

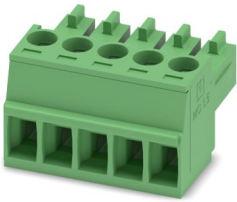
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## MC 1,5/ 5-ST-3,5 - PCB connector

1840395

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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, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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## MCVW 1,5/ 5-ST-3,5 - PCB connector

1862881

<https://www.phoenixcontact.com/us/products/1862881>



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, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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

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## MCVR 1,5/ 5-ST-3,5 - PCB connector

1863181

<https://www.phoenixcontact.com/us/products/1863181>

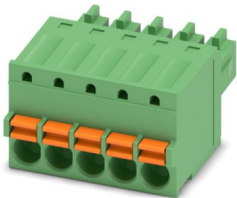


PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MCVR 1,5/...-ST,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

## FK-MCP 1,5/ 5-ST-3,5 - PCB connector

1939947

<https://www.phoenixcontact.com/us/products/1939947>



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, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: FK-MCP 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

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

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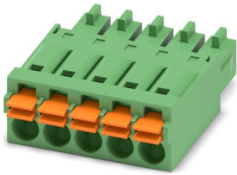
<https://www.phoenixcontact.com/us/products/2278380>



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

1952296

<https://www.phoenixcontact.com/us/products/1952296>



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, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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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