

# MCO 1,5/ 4-G1L-3,5 KMGY - PCB header



2278364

<https://www.phoenixcontact.com/us/products/2278364>

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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: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: MCO 1,5/-G1L, pitch: 3.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 2.75 mm, plug-in system: COMBICON MC 1,5, 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	2278364
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AC08
Product key	ACHADB
Catalog page	Page 232 (C-1-2013)
GTIN	4046356292979
Weight per piece (including packing)	2.319 g
Weight per piece (excluding packing)	2.2 g
Customs tariff number	85366930
Country of origin	PL

# MCO 1,5/ 4-G1L-3,5 KMGY - PCB header



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## Technical data

### Product properties

Product type	PCB headers
Product family	MCO 1,5/...-G1L
Type	Header perpendicular to the PCB
Number of positions	4
Pitch	3.5 mm
Number of connections	4
Number of rows	1
Number of potentials	4
Mounting flange	without
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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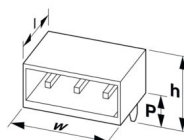
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Temperature for the ball pressure test according to EN 60695-10-2

125 °C

## Dimensions

Dimensional drawing



Pitch

3.5 mm

Width [w]

14.95 mm

Height [h]

15.3 mm

Length [l]

14.55 mm

Solder pin length [P]

2.75 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

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## 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)
Acceleration	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

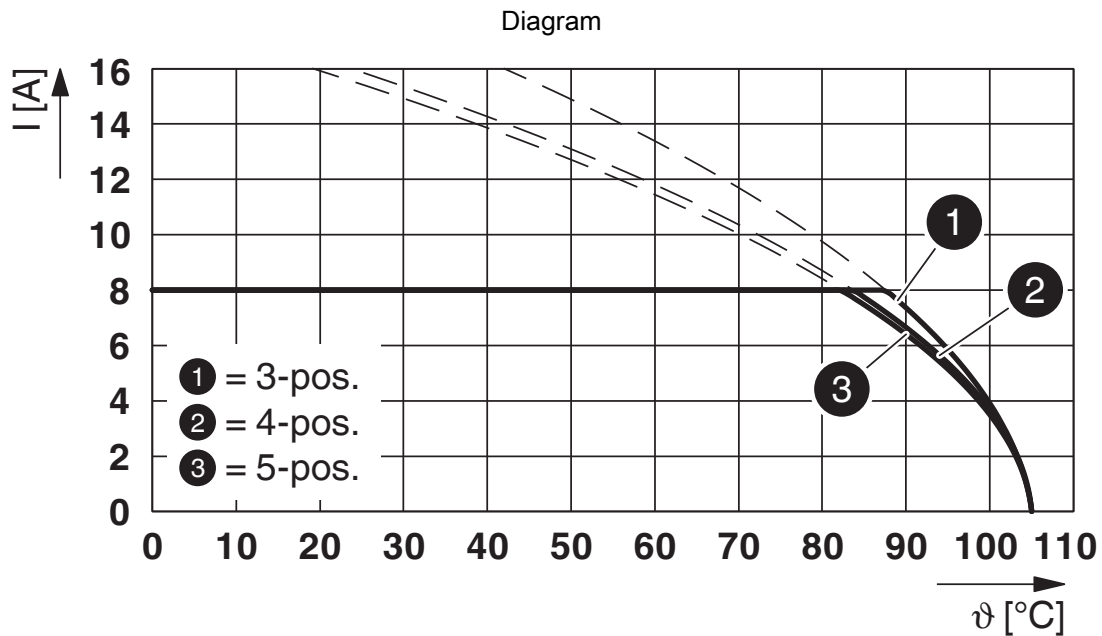
## Ambient conditions

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

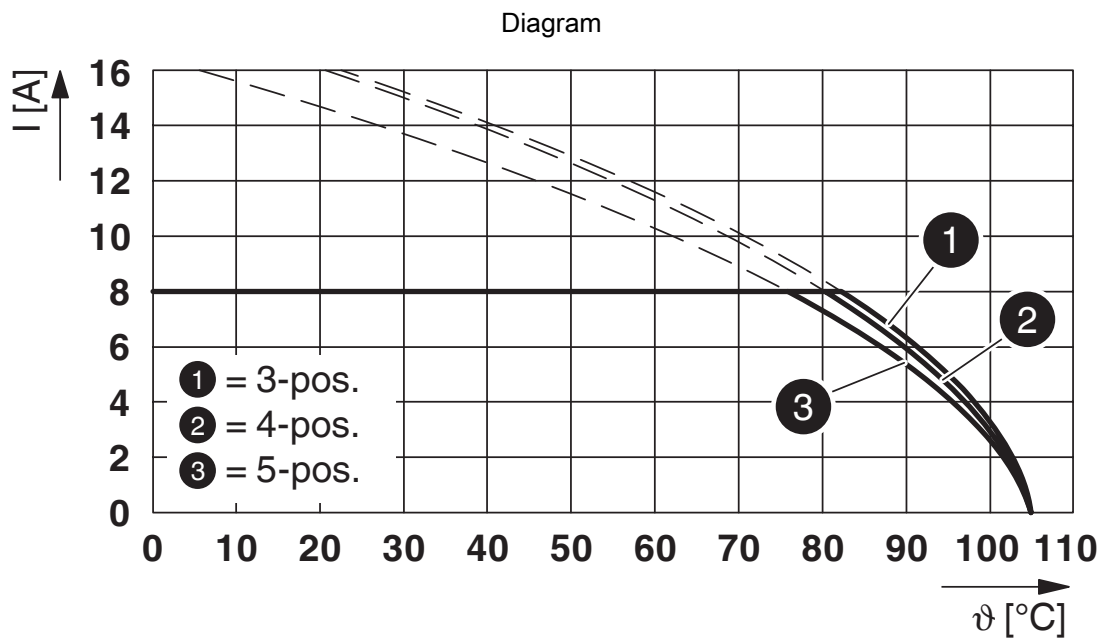
## Packaging specifications

Type of packaging	packed in cardboard
Outer packaging type	Carton

## Drawings



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



Type: FMC 1,5/...-ST-3,5 with MCO 1,5/...-G1L-3,5 KMGY

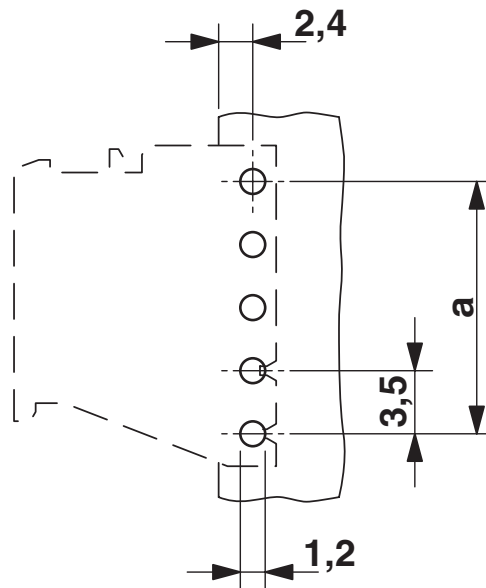
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Drilling plan/solder pad geometry



# MCO 1,5/ 4-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/2278364>

<div> <b>cULus Recognized</b> 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	-	-

# MCO 1,5/ 4-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/ 4-G1L-3,5 KMGY - PCB header



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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%

# MCO 1,5/ 4-G1L-3,5 KMGY - PCB header



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## Mandatory accessories

### MC 1,5/ 4-ST-3,5 GY7035 - PCB connector

1769074

<https://www.phoenixcontact.com/us/products/1769074>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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/ 4-ST-3,5 GY7035 - Printed-circuit board connector

1773578

<https://www.phoenixcontact.com/us/products/1773578>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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/ 4-G1L-3,5 KMGY - PCB header

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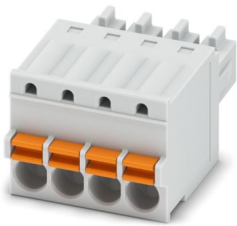
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## FK-MCP 1,5/ 4-ST-3,5 GY7035 - PCB connector

1773594

<https://www.phoenixcontact.com/us/products/1773594>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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



# MCO 1,5/ 4-G1L-3,5 KMGY - PCB header

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## MC 1,5/ 4-ST-3,5 GY7035 - PCB connector

1769074

<https://www.phoenixcontact.com/us/products/1769074>



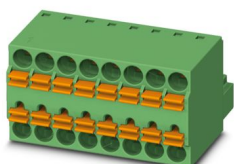
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: light grey, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: MC 1,5/...-ST, 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/ 4-ST-3,5 - PCB connectors

1772634

<https://www.phoenixcontact.com/us/products/1772634>



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: 4, number of rows: 1, number of positions: 4, number of connections: 8, 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/ 4-G1L-3,5 KMGY - PCB header



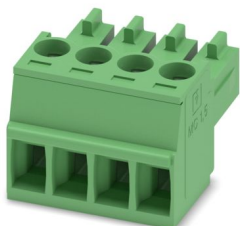
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## MC 1,5/ 4-ST-3,5 - PCB connector

1840382

<https://www.phoenixcontact.com/us/products/1840382>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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/ 4-ST-3,5 - PCB connector

1862878

<https://www.phoenixcontact.com/us/products/1862878>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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/ 4-G1L-3,5 KMGY - PCB header

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## MCVR 1,5/ 4-ST-3,5 - PCB connector

1863178

<https://www.phoenixcontact.com/us/products/1863178>



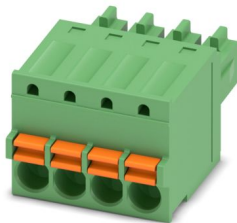
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: MCVR 1,5/...-ST, 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

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## FK-MCP 1,5/ 4-ST-3,5 - PCB connector

1939934

<https://www.phoenixcontact.com/us/products/1939934>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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/ 4-G1L-3,5 KMGY - PCB header

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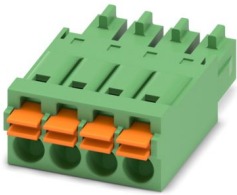
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## FMC 1,5/ 4-ST-3,5 - PCB connectors

1952283

<https://www.phoenixcontact.com/us/products/1952283>



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: 4, number of rows: 1, number of positions: 4, number of connections: 4, 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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