

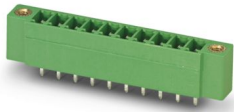
MCV 1,5/20-GF-3,5 - PCB header



1843402

<https://www.phoenixcontact.com/us/products/1843402>

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PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 20, number of rows: 1, number of positions: 20, number of connections: 20, product range: MCV 1,5/..-GF, 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: Screw locking mechanism, mounting: Threaded flange, type of packaging: packed in cardboard

Your advantages

- Well-known mounting principle allows worldwide use
- Screwable flange for superior mechanical stability
- 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 | 1843402 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA02 |
| Product key | AABSAF |
| Catalog page | Page 109 (CC-2005) |
| GTIN | 4017918102371 |
| Weight per piece (including packing) | 6.15 g |
| Weight per piece (excluding packing) | 5.569 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 |
| Product family | MCV 1,5/...-GF |
| Number of positions | 20 |
| Pitch | 3.5 mm |
| Number of connections | 20 |
| Number of rows | 1 |
| Mounting flange | Threaded flange |
| Number of potentials | 20 |
| 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 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) | 250 V |
| Rated surge voltage (II/2) | 2.5 kV |

Mounting

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

Flange

| | |
|-------------------|--------|
| Tightening torque | 0.3 Nm |
|-------------------|--------|

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 μm Sn) |
| Metal surface contact area (middle layer) | Nickel (1 - 3 μm Ni) |
| Metal surface soldering area (top layer) | Tin (3 - 5 μm Sn) |

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| | |
|---|----------------------|
| Metal surface soldering area (middle layer) | Nickel (1 - 3 µm Ni) |
|---|----------------------|

Material data - housing

| | |
|--|--------------|
| Color (Housing) | green (6021) |
| Insulating material | PBT |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 225 |
| Flammability rating according to UL 94 | V0 |

Dimensions

| | |
|-----------------------|--------------|
| Dimensional drawing | |
| Pitch | 3.5 mm |
| Width [w] | 80.3 mm |
| Height [h] | 12.6 mm |
| Length [l] | 7.25 mm |
| Installed height | 9.2 mm |
| Solder pin length [P] | 3.4 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 |
|---------------|------------------------|

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| | |
|--|-------------|
| 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. | 6 N |
| Withdraw strength per pos. approx. | 5 N |

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 | $10^{12} \Omega$ |

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 |
| 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

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| | |
|--|---------------------|
| Specification | IEC 60512-5:1992-08 |
| Impulse withstand voltage at sea level | 2.95 kV |
| Contact resistance R_1 | 1.8 m Ω |
| Contact resistance R_2 | 2.2 m Ω |
| Insertion/withdrawal cycles | 25 |

Climatic test

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

Shocks

| | |
|-----------------|-----------------------------------|
| Specification | IEC 61373:2010-05 |
| Pulse shape | Half-sine |
| Acceleration | 30g |
| Shock duration | 18 ms |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

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

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