

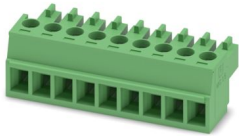
MC 1,5/ 9-ST-3,81 - PCB connector



1803646

<https://www.phoenixcontact.com/us/products/1803646>

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PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: MC 1,5/..-ST, pitch: 3.81 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

Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 1803646 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA02 |
| Product key | AABABA |
| Catalog page | Page 190 (C-1-2013) |
| GTIN | 4017918045951 |
| Weight per piece (including packing) | 6.714 g |
| Weight per piece (excluding packing) | 6.405 g |
| Customs tariff number | 85366990 |
| Country of origin | DE |

MC 1,5/ 9-ST-3,81 - PCB connector



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Technical data

Product properties

| | |
|-----------------------|-----------------------|
| Product type | PCB connector |
| Product family | MC 1,5/...-ST |
| Product line | COMBICON Connectors S |
| Type | Standard |
| Number of positions | 9 |
| Pitch | 3.81 mm |
| Number of connections | 9 |
| Number of rows | 1 |
| Number of potentials | 9 |
| Mounting flange | without |

Electrical properties

| | |
|-----------------------------|----------------|
| Nominal current I_N | 8 A |
| Nominal voltage U_N | 160 V |
| Degree of pollution | 3 |
| Contact resistance | 1.3 m Ω |
| 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 |

Connection data

Connection technology

| | |
|-------------------------|---------------------|
| Type | Standard |
| Connector system | COMBICON MC 1,5 |
| Nominal cross section | 1.5 mm ² |
| Contact connection type | Socket |

Interlock

| | |
|-----------------|---------|
| Locking type | without |
| Mounting flange | without |

Conductor connection

| | |
|--|--|
| Connection method | Screw connection with tension sleeve |
| Conductor/PCB connection direction | 0 ° |
| Conductor cross section rigid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 28 ... 16 |
| Conductor cross section flexible, with ferrule without plastic | 0.25 mm ² ... 1.5 mm ² |

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| | |
|---|---|
| sleeve | |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 0.75 mm ² |
| 2 conductors with same cross section, solid | 0.08 mm ² ... 0.5 mm ² |
| 2 conductors with same cross section, flexible | 0.08 mm ² ... 0.75 mm ² |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 0.34 mm ² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm ² ... 0.5 mm ² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 1.5 mm / 1.6 mm |
| Stripping length | 7 mm |
| Tightening torque | 0.22 Nm ... 0.25 Nm |

Specifications for ferrules without insulating collar

| | |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

Specifications for ferrules with insulating collar

| | |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

Material specifications

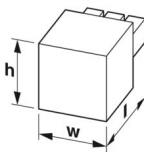
Material data - contact

| | |
|--|--|
| 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 terminal point (top layer) | Tin (4 - 8 µm Sn) |
| Metal surface contact area (top layer) | Tin (4 - 8 µm Sn) |

Material data - housing

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

MC 1,5/ 9-ST-3,81 - PCB connector



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| | |
|------------|----------|
| Width [w] | 35.08 mm |
| Height [h] | 11.1 mm |
| Length [l] | 16.1 mm |

Mounting

| | |
|-----------------------|-------------|
| Drive form screw head | Slotted (L) |
|-----------------------|-------------|

Mechanical tests

Test for conductor damage and slackening

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |

Pull-out test

| | |
|---|---|
| Specification | IEC 60999-1:1999-11 |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.14 mm ² / solid / > 7 N |
| | 0.14 mm ² / flexible / > 7 N |
| | 1.5 mm ² / solid / > 40 N |
| | 1.5 mm ² / flexible / > 40 N |

Insertion and withdrawal forces

| | |
|-------------------------------------|-------------|
| Result | Test passed |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 6 N |
| Withdraw strength per pos. approx. | 4 N |

Torque test

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
|---------------|---------------------|

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 |

Visual inspection

| | |
|---------------|-----------------------|
| Specification | IEC 60512-1-1:2002-02 |
| Result | Test passed |

Dimension check

| | |
|---------------|-----------------------|
| Specification | IEC 60512-1-2:2002-02 |
| Result | Test passed |

Environmental and real-life conditions

Vibration test

| | |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:2007-12 |
|---------------|-----------------------|

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| | |
|------------------------|-----------------------------|
| 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 ₁ | 1.3 mΩ |
| Contact resistance R ₂ | 1.5 mΩ |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 MΩ |

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 |

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 |

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 | > 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 |
| Note on connection cross section | With connected conductor 1.5 mm ² (solid). |
| Rated insulation voltage (III/2) | 160 V |
| Rated surge voltage (III/2) | 2.5 kV |

MC 1,5/ 9-ST-3,81 - PCB connector



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

Packaging specifications

| | |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

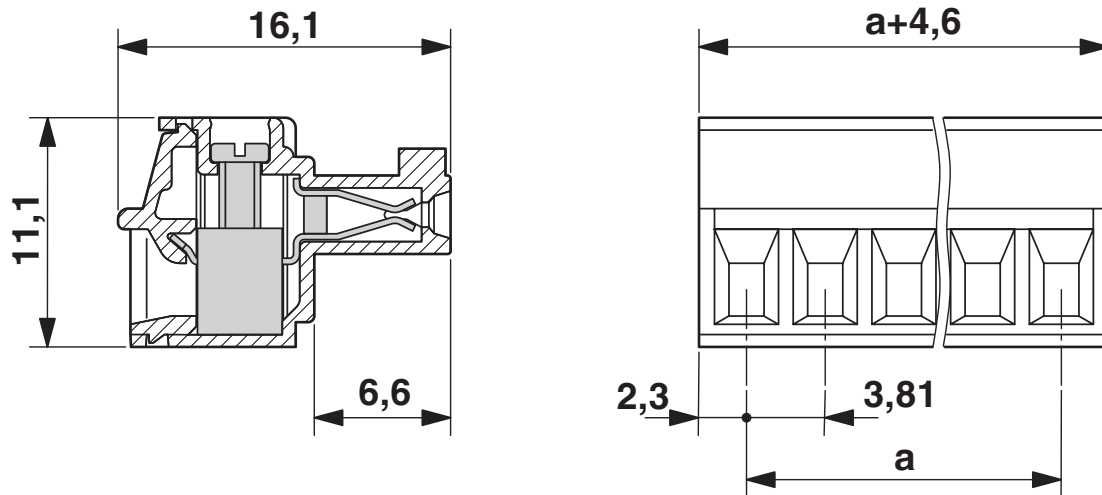
MC 1,5/ 9-ST-3,81 - PCB connector

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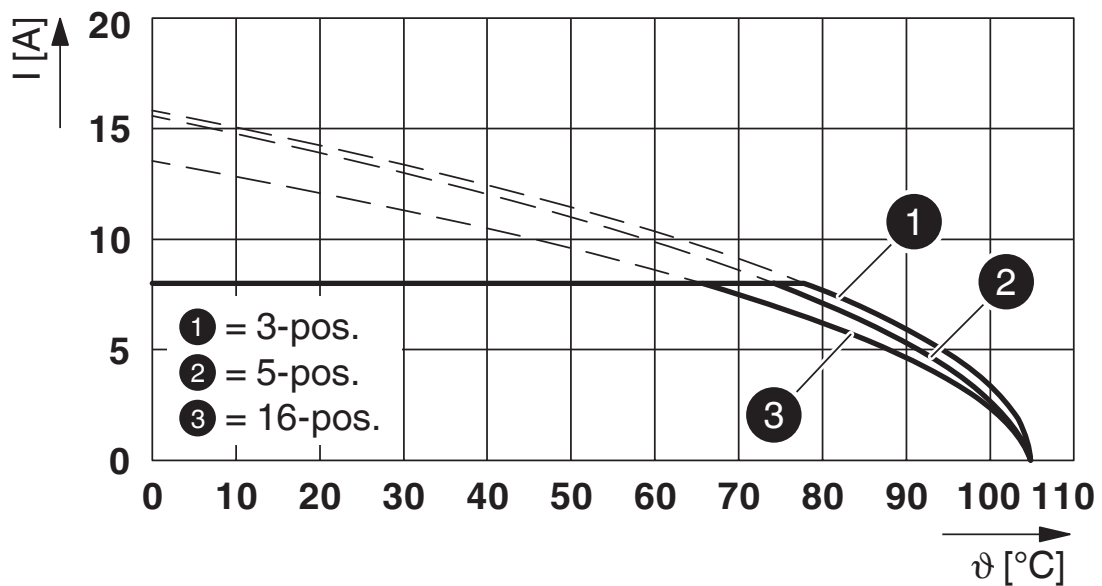
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Drawings

Dimensional drawing



Diagram



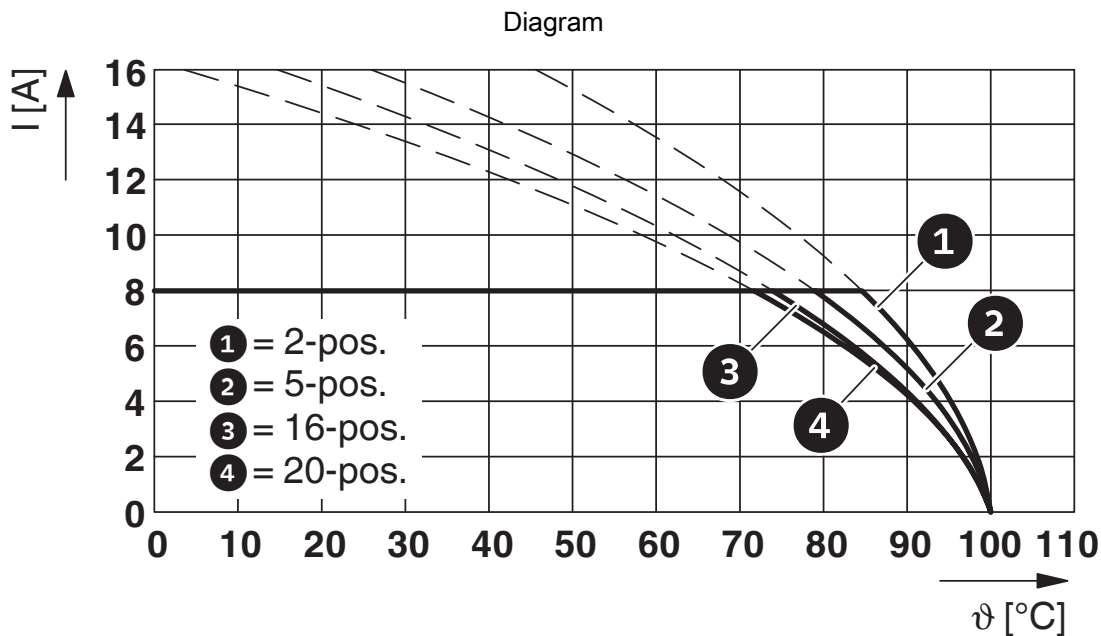
Type: MC 1,5/...-ST-3,81 with MCVK 1,5/...-G-3,81

MC 1,5/ 9-ST-3,81 - PCB connector

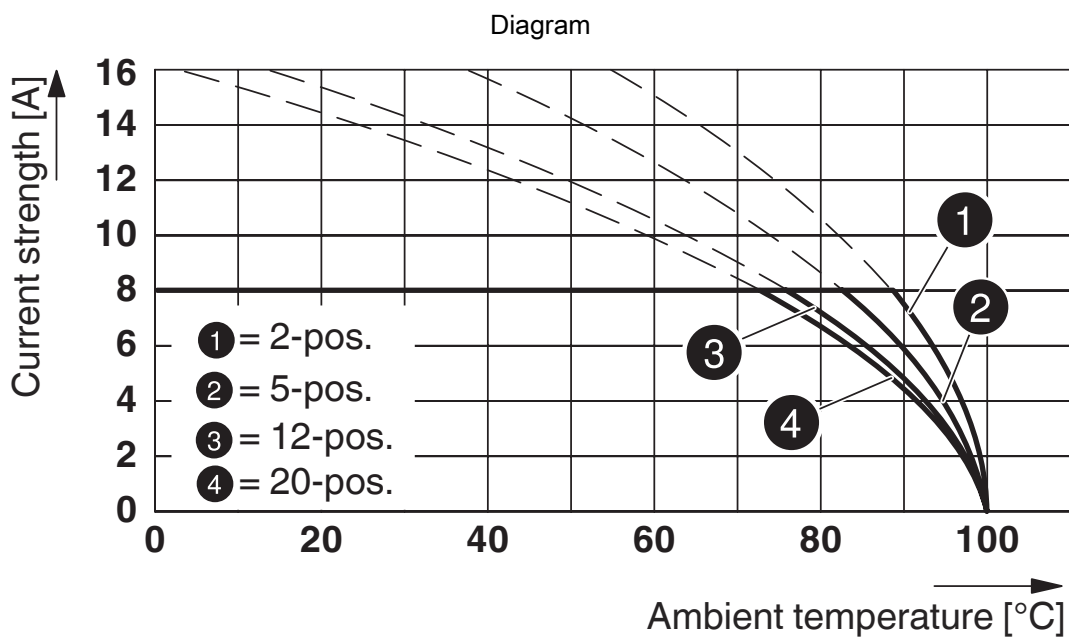


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Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P...THR



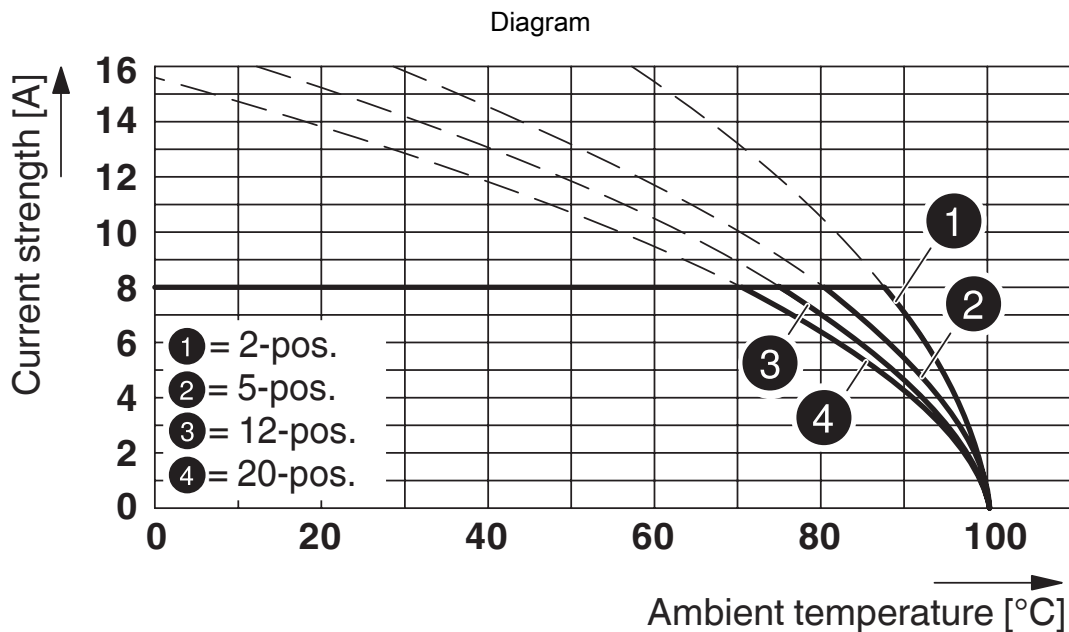
Type: MC 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81

MC 1,5/ 9-ST-3,81 - PCB connector

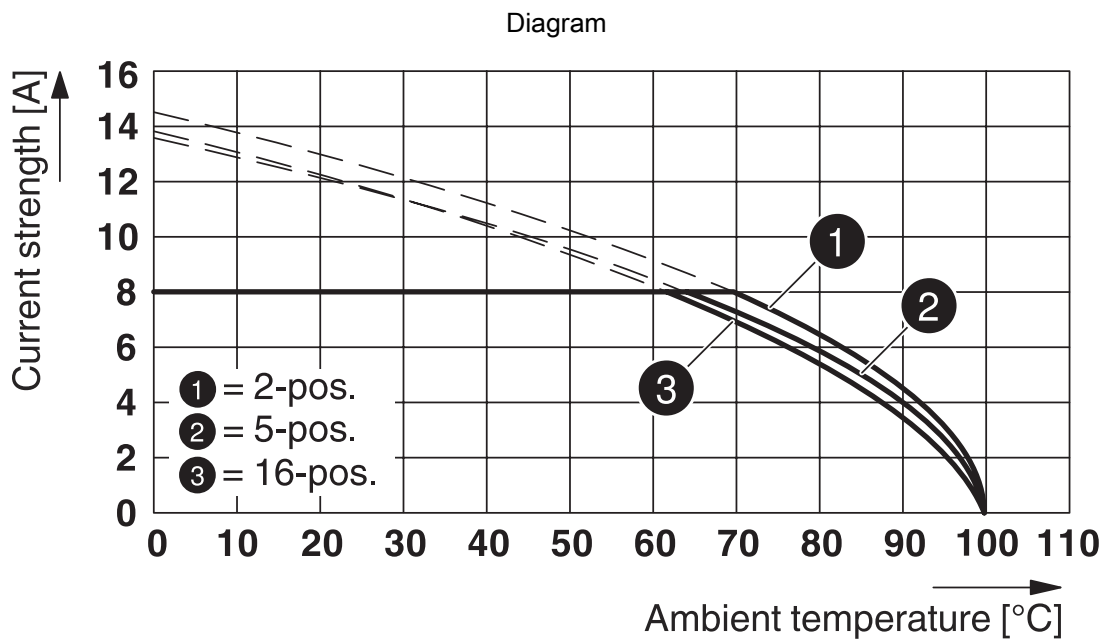


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Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81



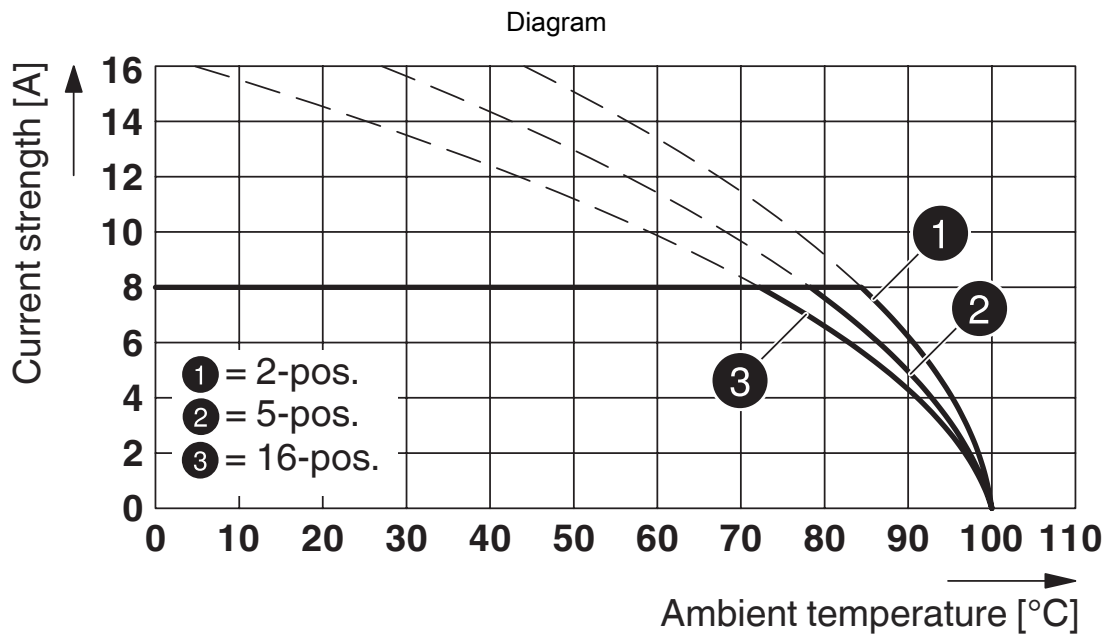
Type: MC 1,5/...-ST-3,81 with MCVU 1,5/...-GFD-3,81

MC 1,5/ 9-ST-3,81 - PCB connector

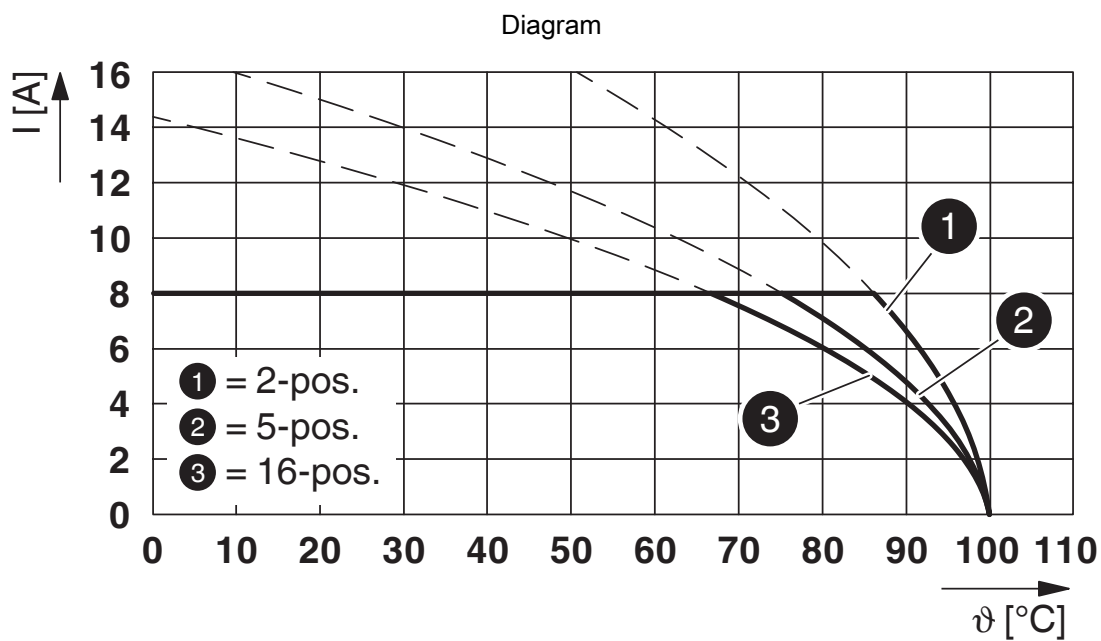


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Type: MC 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81



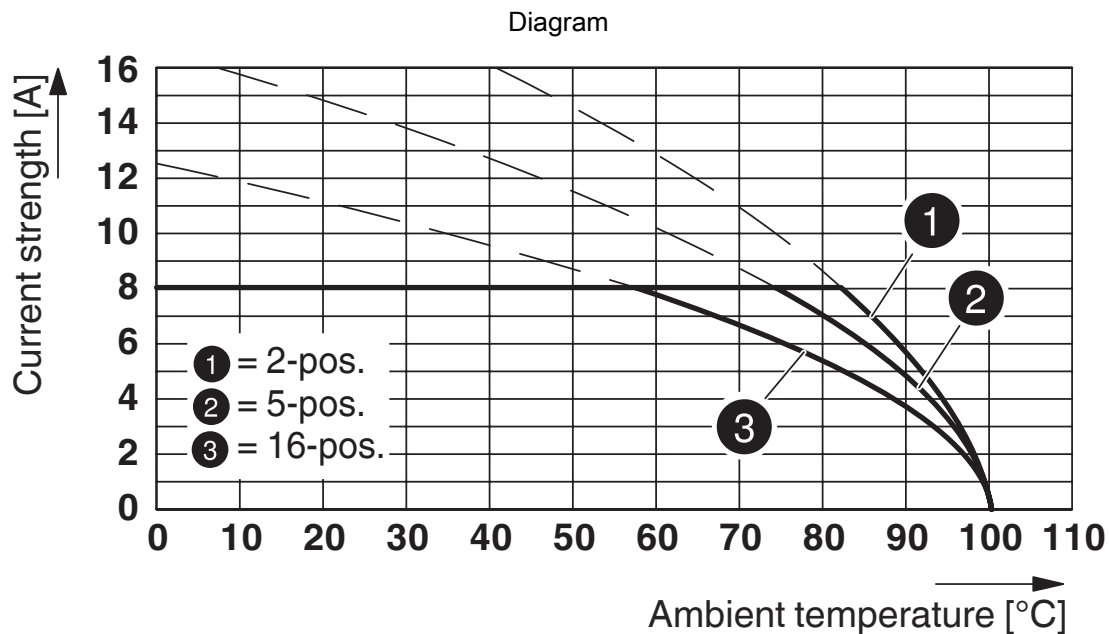
Type: MC 1,5/...-ST-3,81 with MCDV 1,5/...-G-3,81

MC 1,5/ 9-ST-3,81 - PCB connector

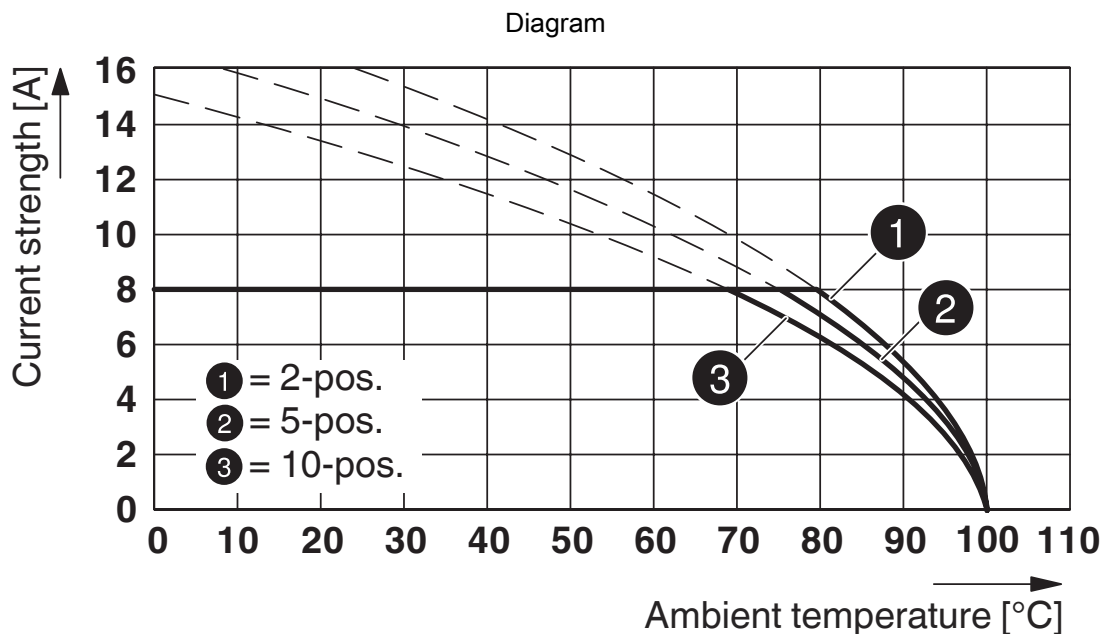


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Type: MC 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81



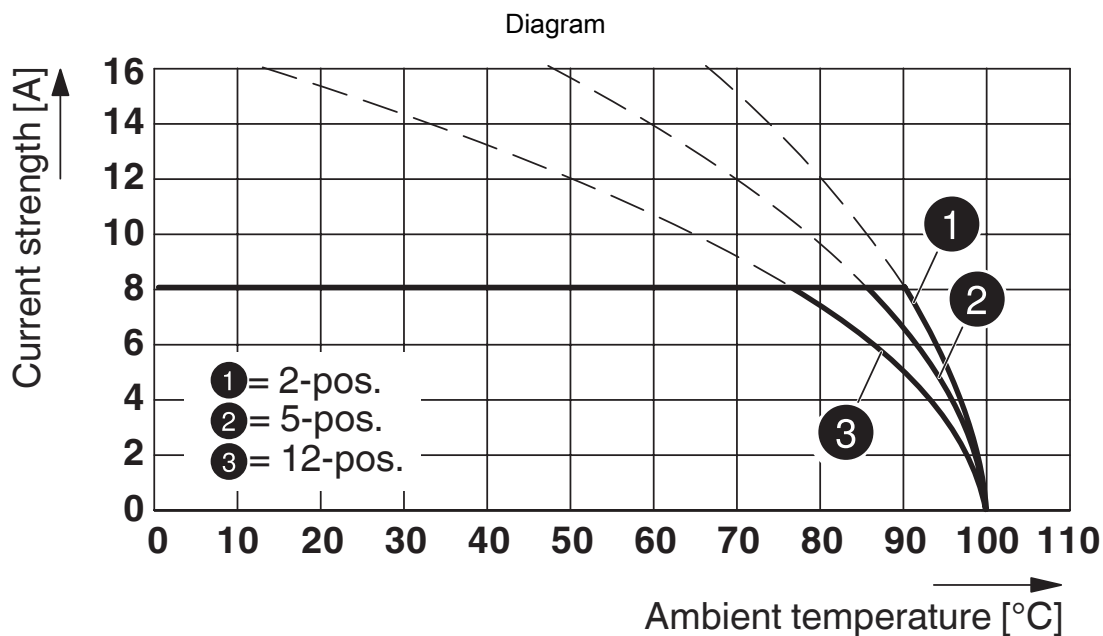
Type: MC 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81

MC 1,5/ 9-ST-3,81 - PCB connector

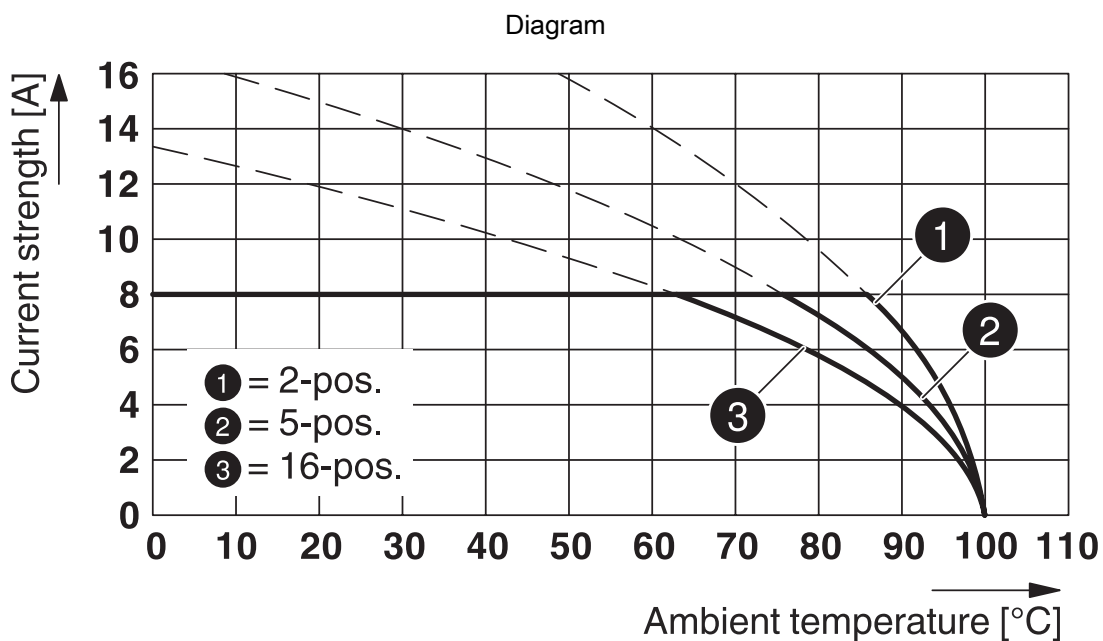


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Type: MC 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81 P26 THR

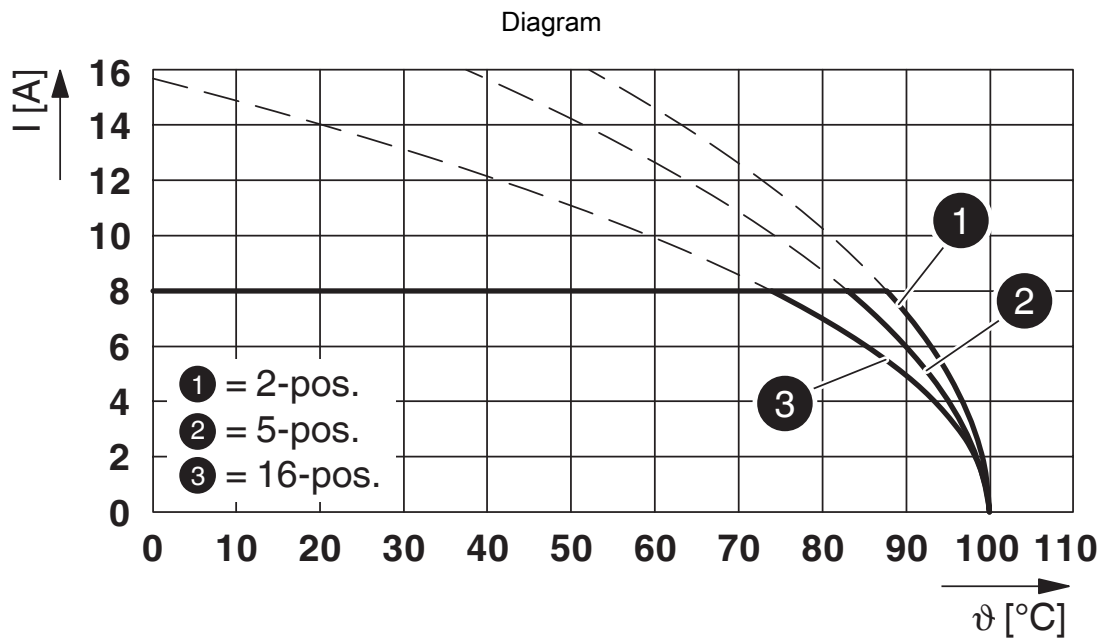


Type: MC 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81

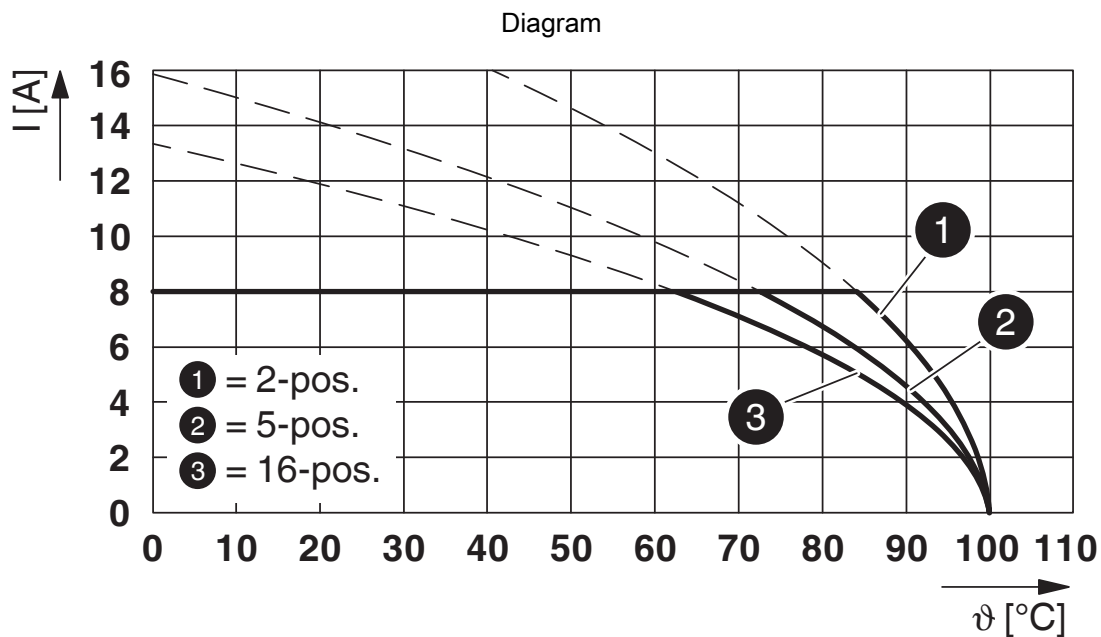
MC 1,5/ 9-ST-3,81 - PCB connector

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Type: MC 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81



Type: MC 1,5/...-ST-3,81 with MCD 1,5/...-G-3,81

MC 1,5/ 9-ST-3,81 - PCB connector





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<https://www.phoenixcontact.com/us/products/1803646>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1803646>

|  CSA Approval ID: 13631 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| Use group B | | | | |
| | 300 V | 8 A | 28 - 16 | - |
| Use group D | | | | |
| | 300 V | 8 A | 28 - 16 | - |

|  cULus Recognized Approval ID: E60425-20110128 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| Use group B | | | | |
| | 300 V | 8 A | 30 - 14 | - |
| Use group D | | | | |
| | 300 V | 8 A | 30 - 14 | - |

|  VDE Zeichengenehmigung Approval ID: 40011723 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| | 160 V | 8 A | - | 0.2 - 1.5 |

MC 1,5/ 9-ST-3,81 - PCB connector



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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27460202 |
| ECLASS-12.0 | 27460202 |
| ECLASS-13.0 | 27460202 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC002638 |
|----------|----------|

UNSPSC

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

MC 1,5/ 9-ST-3,81 - PCB connector



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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% |
|-------------------------------------|----------------------------|

MC 1,5/ 9-ST-3,81 - PCB connector

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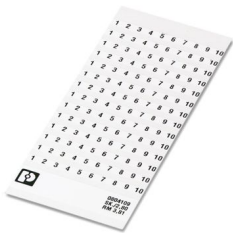


Accessories

SK 3,81/2,8:FORTL.ZAHLEN - Marker card

0804109

<https://www.phoenixcontact.com/us/products/0804109>



Marker card, Sheet, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 .. 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 3.81 mm, lettering field size: 3.81 x 2.8 mm, Number of individual labels: 14

SZS 0,4X2,5 VDE - Screwdriver

1205037

<https://www.phoenixcontact.com/us/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

MC 1,5/ 9-ST-3,81 - PCB connector

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KGG-MC 1,5/ 9 - Cable housing

1834411

<https://www.phoenixcontact.com/us/products/1834411>



Cable housing, color: green, product range: KGG-MC 1,5, width: 14.5 mm

EBPL 2-3,81 - Insertion bridge

1733495

<https://www.phoenixcontact.com/us/products/1733495>



Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch

MC 1,5/ 9-ST-3,81 - PCB connector

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EBPL 3-3,81 - Insertion bridge

1733505

<https://www.phoenixcontact.com/us/products/1733505>

Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch



EBPL 4-3,81 - Insertion bridge

1733518

<https://www.phoenixcontact.com/us/products/1733518>

Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch



MC 1,5/ 9-ST-3,81 - PCB connector

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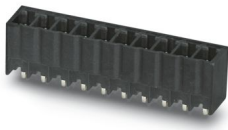
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MCV 1,5/ 9-G-3,81 P14 THR - PCB header

1707078

<https://www.phoenixcontact.com/us/products/1707078>

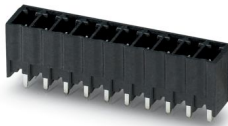


PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: MCV 1,5/..-G-THR, pitch: 3.81 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

MCV 1,5/ 9-G-3,81 P26 THR - PCB header

1707492

<https://www.phoenixcontact.com/us/products/1707492>



PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: MCV 1,5/..-G-THR, pitch: 3.81 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

MC 1,5/ 9-ST-3,81 - PCB connector

1803646

<https://www.phoenixcontact.com/us/products/1803646>



MCO 1,5/ 9-GL-3,81 - PCB header

1861798

<https://www.phoenixcontact.com/us/products/1861798>



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: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: MCO 1,5/...-GL, pitch: 3.81 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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