

Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

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PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin




The figure shows a 10-position version of the product

Your advantages

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



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 250 pc |
| GTIN |  4 017918 045890 |
| GTIN | 4017918045890 |

Technical data

Item properties

| | |
|---------------------------|--------------------------------------|
| Brief article description | Printed-circuit board connector |
| Plug-in system | MINI COMBICON |
| Type of contact | Female connector |
| Range of articles | MC 1,5/...-ST |
| Pitch | 3.81 mm |
| Number of positions | 3 |
| Connection method | Screw connection with tension sleeve |
| Drive form screw head | Slotted (L) |
| Screw thread | M2 |
| Locking | without |
| Number of levels | 1 |
| Number of connections | 3 |

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Technical data

Item properties

| | |
|----------------------|---|
| Number of potentials | 3 |
|----------------------|---|

Electrical parameters

| | |
|-----------------------------|--------|
| Nominal current | 8 A |
| Nom. voltage | 160 V |
| Rated voltage | 160 V |
| Rated voltage (III/2) | 160 V |
| Rated voltage (II/2) | 320 V |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated surge voltage (II/2) | 2.5 kV |

Connection capacity

| | |
|---|---|
| Connection method | Screw connection with tension sleeve |
| pluggable | Yes |
| Conductor cross section solid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG / kcmil | 28 ... 16 |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 0.5 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 |
| Torque | 0.22 Nm ... 0.25 Nm |

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

| | |
|--|--------------|
| Housing color | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |

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Material data - housing

| | |
|---|--------|
| 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 for the product

| | |
|-----------------------------|----------|
| Length [l] | 16.1 mm |
| Width [w] | 12.22 mm |
| Pitch | 3.81 mm |
| Height (without solder pin) | 11.1 mm |

Packaging information

| | |
|----------------------------|---------------------|
| Type of packaging | packed in cardboard |
| Pieces per package | 250 |
| Denomination packing units | Pcs. |

Ambient conditions

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |

Termination and connection method

| | |
|--|---------------------|
| Test for conductor damage and slackening | IEC 60999-1:1999-11 |
| | Test passed |

Pull-out test

| | |
|--|---|
| Pull-out test | IEC 60999-1:1999-11 |
| | Test passed |
| Conductor cross section / conductor type / tensile force | 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 |

Mechanical tests according to standard

| | |
|-------------------------------------|------------------------|
| Test specification | IEC 61984 |
| Visual inspection | IEC 60512-1-1:2002-02 |
| Dimension check | IEC 60512-1-2:2002-02 |
| Resistance of inscriptions | IEC 60068-2-70:1995-12 |
| Insertion and withdrawal force | IEC 60512-13-2:2006-02 |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 6 N |
| Withdraw strength per pos. approx. | 4 N |
| Polarization and coding | IEC 60512-13-5:2006-02 |
| Contact holder in insert | IEC 60512-15-1:2008-05 |
| Test force per pos. | 21 N |

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Air clearances and creepage distances

| | |
|---|---|
| Clearances and creepage distances | IEC 60664-1:2007-04 |
| Specification | IEC 60664-1:2007-04 |
| Minimum clearance - inhomogeneous field (III/3) | 1.5 mm |
| Minimum clearance - inhomogeneous field (III/2) | 1.5 mm |
| Minimum clearance - inhomogeneous field (II/2) | 1.5 mm |
| Minimum creepage distance value (III/3) | 2 mm |
| Minimum creepage distance value (III/2) | 1.5 mm |
| Minimum creepage distance value (II/2) | 1.6 mm |
| Note on connection cross section | With connected conductor 1.5 mm ² (solid). |

Current carrying capacity / derating curves

| | |
|------------------|---|
| Caption | Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 |
| Specification | IEC 61984:2008-10 |
| Reduction factor | 0.8 |
| Note | Representation based on IEC 60512-5-2:2002-02 |
| | For number of positions, see diagram |

Mechanical tests (A)

| | |
|--|-------------|
| Test specification | IEC 61984 |
| Insertion strength per pos. approx. | 6 N |
| Withdraw strength per pos. approx. | 4 N |
| Polarization when inserted requirement >20 N | Test passed |
| Contact holder in insert requirements >20 N | Test passed |

Durability tests (B)

| | |
|--|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
| Contact resistance R ₁ | 1.3 mΩ |
| Insertion/withdrawal cycles | 25 |
| Contact resistance R ₂ | 1.5 mΩ |
| Impulse withstand voltage at sea level | 2.95 kV |
| Power-frequency withstand voltage | 1.39 kV |
| Insulation resistance, neighboring positions | 15 TΩ |

Thermal tests (C)

| | |
|---|-----------------------|
| Specification | IEC 60512-5-1:2002-02 |
| Number of positions | 20 |
| Conductor cross section | 1.5 mm ² |
| Test current | 8 A DC |
| Upper limiting temperature requirements <100 °C | Test passed |

Climatic tests (D)

| | |
|---------------|------------------|
| Specification | ISO 6988:1985-02 |
| Cold stress | -40 °C/2 h |

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Climatic tests (D)

| | |
|--|---|
| Thermal stress | 100 °C/168 h |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle |
| Impulse withstand voltage at sea level | 2.95 kV |
| Power-frequency withstand voltage | 1.39 kV |

Environmental and durability tests (E)

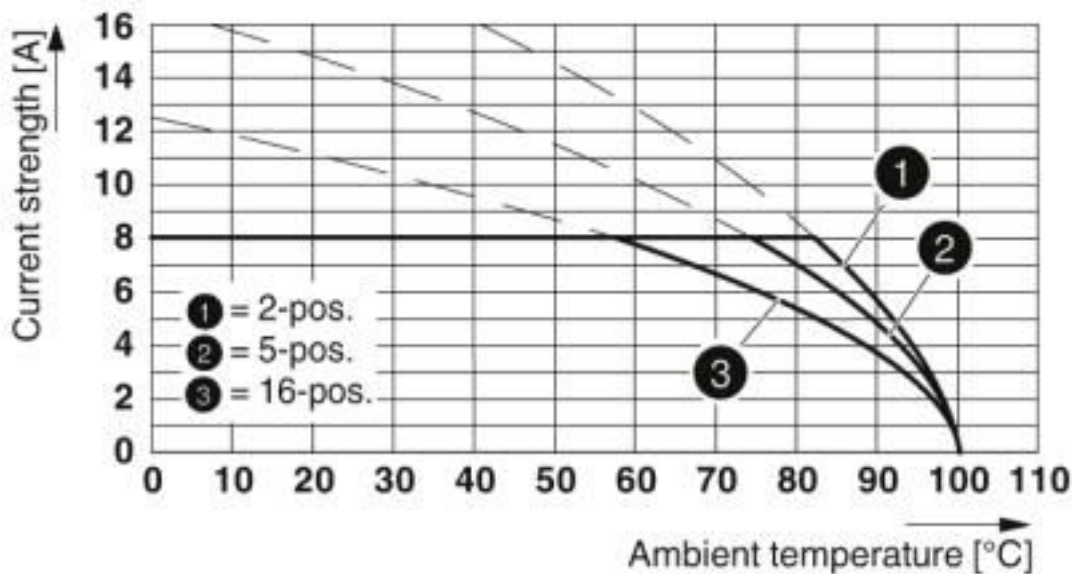
| | |
|---------------------------------------|-------------------------------------|
| Specification | IEC 61984:2008-10 |
| Result, degree of protection, IP code | Finger safety with IP20 test finger |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

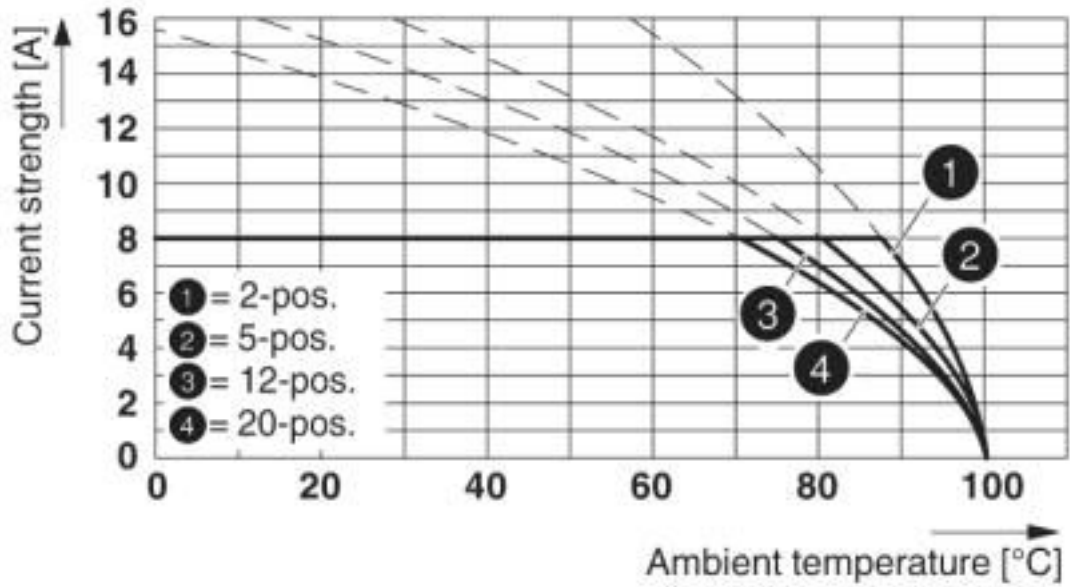
Diagram



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

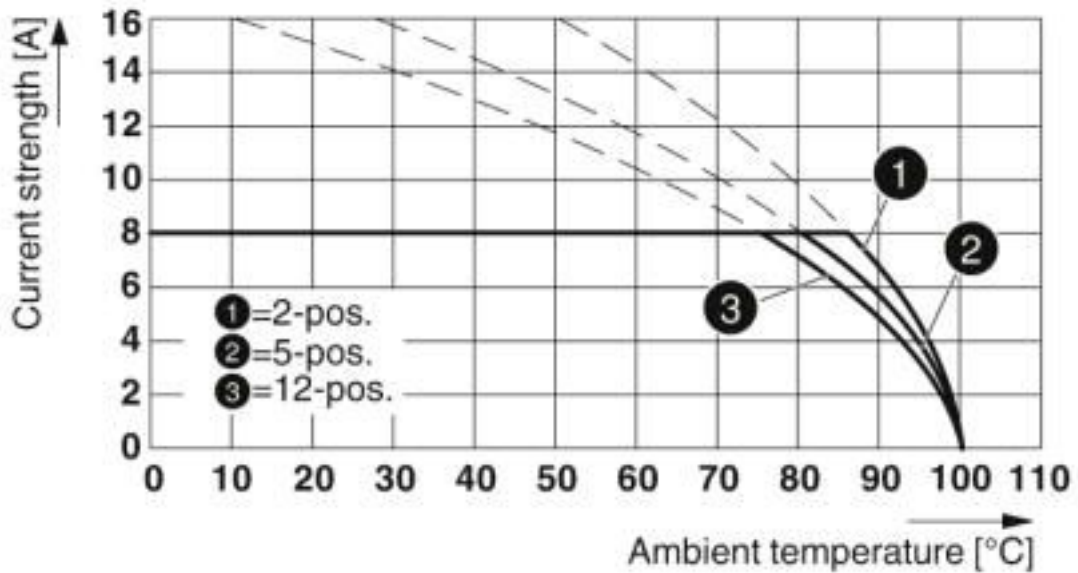
Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Diagram



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

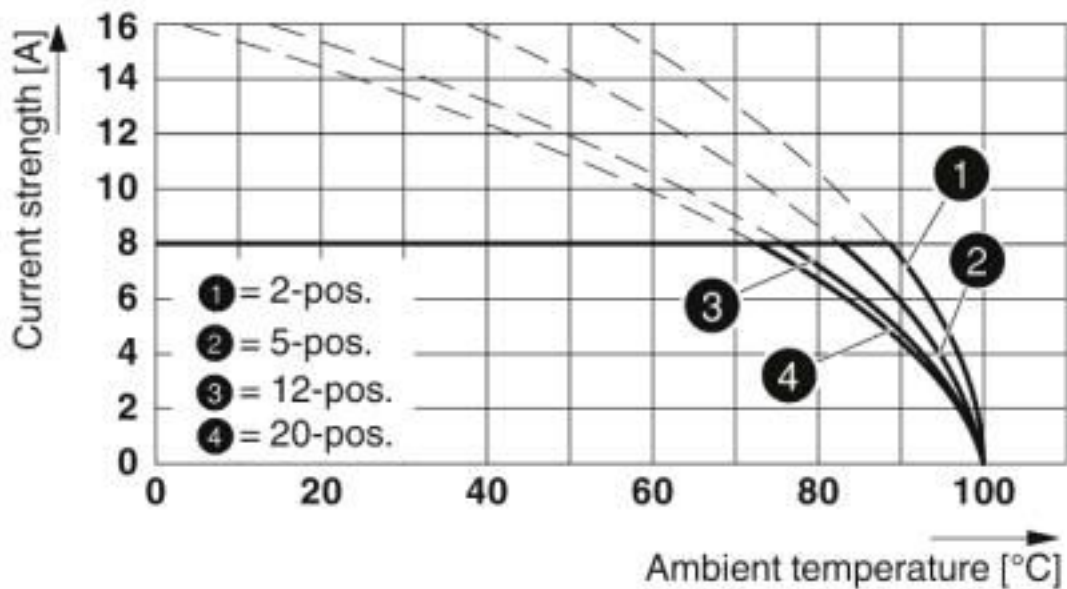
Diagram



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

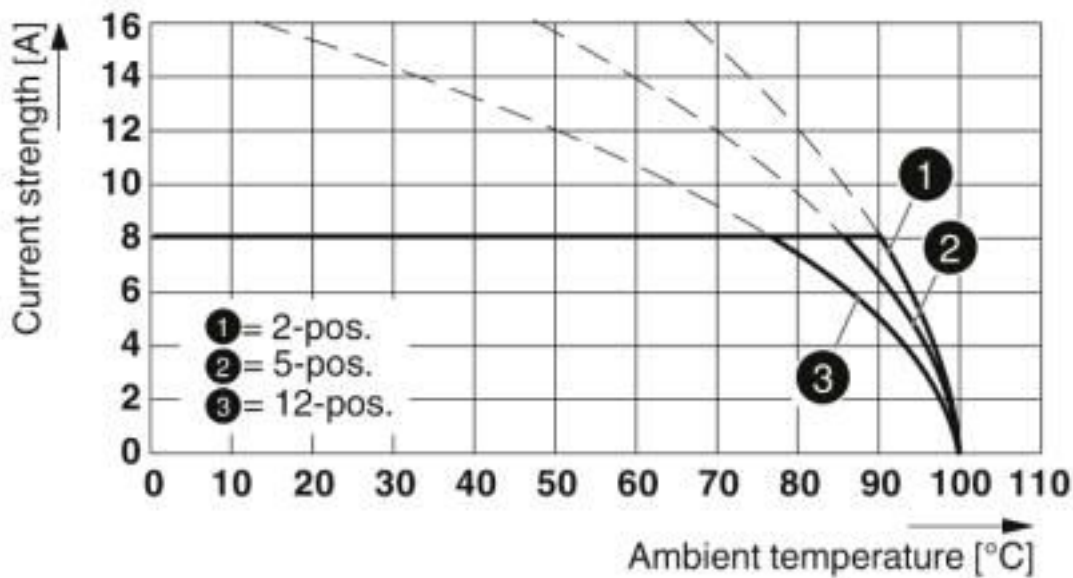
Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Diagram



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

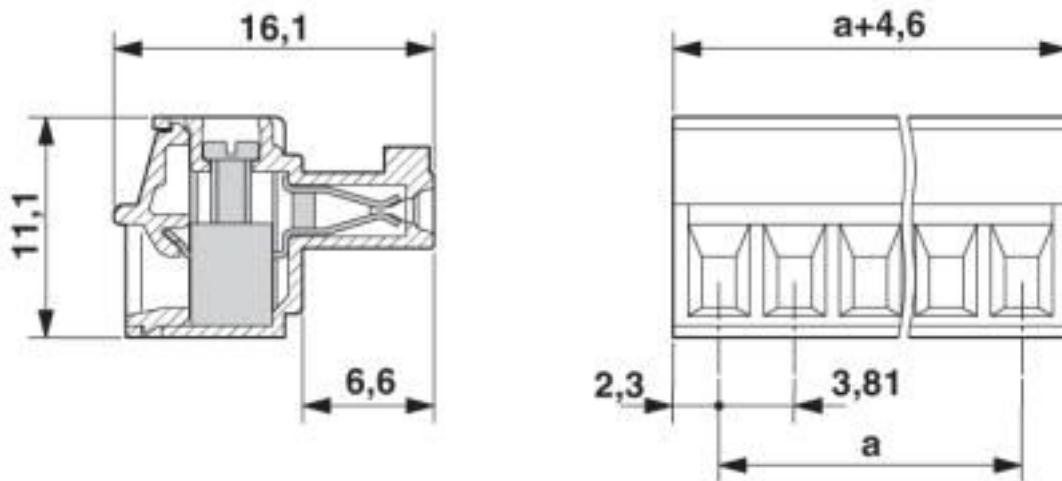
Diagram



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

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Dimensional drawing



Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27440309 |
| eCl@ss 4.0 | 27260700 |
| eCl@ss 4.1 | 27260700 |
| eCl@ss 5.0 | 27260700 |
| eCl@ss 5.1 | 27260700 |
| eCl@ss 6.0 | 27260700 |
| eCl@ss 7.0 | 27440309 |
| eCl@ss 8.0 | 27440309 |
| eCl@ss 9.0 | 27440309 |

ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001121 |
| ETIM 4.0 | EC002638 |
| ETIM 5.0 | EC002638 |
| ETIM 6.0 | EC002638 |
| ETIM 7.0 | EC002638 |

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211810 |
| UNSPSC 7.0901 | 39121409 |
| UNSPSC 11 | 39121409 |
| UNSPSC 12.01 | 39121409 |
| UNSPSC 13.2 | 39121409 |
| UNSPSC 18.0 | 39121409 |
| UNSPSC 19.0 | 39121409 |
| UNSPSC 20.0 | 39121409 |

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Classifications

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121409 |
|-------------|----------|

Approvals


Approvals


Approvals


CSA / IEC EE CB Scheme / VDE Gutachten mit Fertigungsüberwachung / EAC / cULus Recognized

Ex Approvals

Approval details

| | | | |
|----------------------------|--|---|-------|
| CSA |  | http://www.csagroup.org/services-industries/product-listing/ | 13631 |
| | | B | D |
| Nominal voltage UN | | 300 V | 300 V |
| Nominal current IN | | 8 A | 8 A |
| mm ² /AWG/kcmil | | 28-16 | 28-16 |

| | | | |
|----------------------------|---|---|----------------|
| IECEE CB Scheme |  | http://www.iecee.org/ | DE1-60987-B1B2 |
| Nominal voltage UN | | 160 V | |
| Nominal current IN | | 8 A | |
| mm ² /AWG/kcmil | | 0.2-1.5 | |

| | | | |
|---|---|---|----------|
| VDE Gutachten mit Fertigungsüberwachung |  | http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx | 40011723 |
| Nominal voltage UN | | 160 V | |
| Nominal current IN | | 8 A | |
| mm ² /AWG/kcmil | | 0.2-1.5 | |

| | | | |
|-----|---|--|---------|
| EAC |  | | B.01687 |
|-----|---|--|---------|

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Approvals

| | | | |
|----------------------------|-------|---|-----------------|
| cULus Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | E60425-20110128 |
| | B | D | |
| Nominal voltage UN | 300 V | 300 V | |
| Nominal current IN | 8 A | 8 A | |
| mm ² /AWG/kcmil | 30-14 | 30-14 | |

Accessories

Accessories

Bridge

Insertion bridge - EBPL 2-3,81 - 1733495



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

Insertion bridge - EBPL 3-3,81 - 1733505



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

Cable housing

Cable housing - KGG-MC 1,5/ 3 - 1834356



Cable housing, pitch: 3.81 mm, number of positions: 3, dimension a: 13.82 mm, color: green

Labeled terminal marker

Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Accessories

Marker card - SK 3,81/2,8:FORTL.ZAHLEN - 0804109



Marker card, Card, 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

Screwdriver tools

Screwdriver - SZS 0,4X2,5 VDE - 1205037



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

Additional products

Feed-through header - MCV 1,5/ 3-G-3,81 P14 THR - 1707010



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, User information and design recommendations for through hole reflow technology can be found under: Downloads

Feed-through header - MCV 1,5/ 3-G-3,81 P26 THR - 1707434



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, User information and design recommendations for through hole reflow technology can be found under: Downloads

Feed-through header - MCV 1,5/ 3-G-3,81 P26 THRR32 - 1712843



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, User information and design recommendations for through hole reflow technology can be found under: Downloads

Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Accessories

Printed-circuit board connector - MC 1,5/ 3-G-3,81 P20 THRR32 - 1782585



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, User information and design recommendations for through hole reflow technology can be found under: [Downloads](#)

Printed-circuit board connector - MC 1,5/ 3-G-3,81 - 1803280



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm

Printed-circuit board connector - MCV 1,5/ 3-G-3,81 - 1803439



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm

Printed-circuit board connector - SMC 1,5/ 3-G-3,81 - 1827282



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm

Feed-through header - MCD 1,5/ 3-G-3,81 - 1829963



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Accessories

Feed-through header - MCDV 1,5/ 3-G-3,81 - 1830415



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

Feed-through header - MCVDU 1,5/ 3-G-3,81 - 1832701



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 2.5 mm

Printed-circuit board connector - MCD 1,5/ 3-G1-3,81 - 1843088



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

Feed-through header - MCDV 1,5/ 3-G1-3,81 - 1847738



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

Feed-through header - EMCV 1,5/ 3-G-3,81 - 1860650



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Press-in technology, pin layout: Linear pinning, solder pin [P]: 3.8 mm

Printed-circuit board connector - MC 1,5/ 3-ST-3,81 - 1803581

Accessories

Feed-through header - MCO 1,5/ 3-GR-3,81 - 1861659



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3 mm

Feed-through header - MCO 1,5/ 3-GL-3,81 - 1861730



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3 mm

Feed-through header - EMC 1,5/ 3-G-3,81 - 1897814



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 3, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Press-in technology, pin layout: Linear pinning, solder pin [P]: 3.5 mm

Feed-through header - MC 1,5/ 3-G-3,81 THT - 1908774



PCB headers, number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, pin layout: Linear pinning, solder pin [P]: 3.4 mm, User information and design recommendations for through hole reflow technology can be found under: Downloads

Feed-through header - MC 1,5/ 3-G-3,81 THT-R56 - 1943768



PCB headers, number of positions: 3, pitch: 3.81 mm, color: black, contact surface: Tin, pin layout: Linear pinning, User information and design recommendations for through hole reflow technology can be found under: Downloads

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