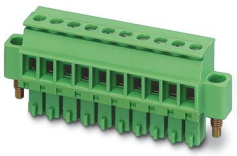
# MCVR 1,5/ 4-STF-3,81 - PCB connector

1828362

https://www.phoenixcontact.com/us/products/1828362

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB connector, nominal cross section: 1.5 mm$^2$, 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/. .-STF, pitch: 3.81 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: Screw locking mechanism, mounting: Screw flange, 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
- Screwable flange for superior mechanical stability

## Commercial data

| | |
|---|---|
| Item number | 1828362 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA02 |
| Product key | AABAEB |
| Catalog page | Page 193 (C-1-2013) |
| GTIN | 4017918114688 |
| Weight per piece (including packing) | 4.236 g |
| Weight per piece (excluding packing) | 3.976 g |
| Customs tariff number | 85366990 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | PCB connector |
| Product family | MCVR 1,5/..-STF |
| Product line | COMBICON Connectors S |
| Type | Standard |
| Number of positions | 4 |
| Pitch | 3.81 mm |
| Number of connections | 4 |
| Number of rows | 1 |
| Number of potentials | 4 |
| Mounting flange | Screw flange |

## Electrical properties

| | |
|---|---|
| Nominal current $I_N$ | 8 A |
| Nominal voltage $U_N$ | 160 V |
| Degree of pollution | 3 |
| Contact resistance | 3.4 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 |

## Connection data

### Connection technology

| | |
|---|---|
| Type | Standard |
| Connector system | COMBICON MC 1,5 |
| Nominal cross section | 1.5 mm² |
| Contact connection type | Socket |

### Interlock

| | |
|---|---|
| Locking type | Screw locking mechanism |
| Mounting flange | Screw flange |
| Tightening torque | 0.3 Nm |

### Conductor connection

| | |
|---|---|
| Connection method | Screw connection with tension sleeve |
| Conductor/PCB connection direction | 90 ° |
| Conductor cross section rigid | 0.14 mm² ... 1.5 mm² |
| Conductor cross section flexible | 0.14 mm² ... 1.5 mm² |
| Conductor cross section AWG | 28 ... 16 |

| | |
|---|---|
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 0.5 mm² |
| 2 conductors with same cross section, solid | 0.08 mm² ... 0.5 mm² |
| 2 conductors with same cross section, flexible | 0.08 mm² ... 0.75 mm² |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 0.25 mm² ... 0.34 mm² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm² ... 0.5 mm² |
| 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

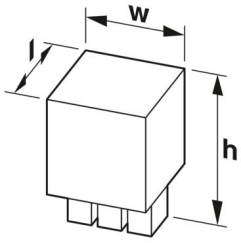
Material data - contact

| | |
|---|---|
| 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 |
| Width [w] | 25.63 mm |
| Height [h] | 19.1 mm |
| Length [l] | 10.4 mm |

## Mounting

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

### Flange

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

## 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 mm² / solid / > 10 N |
| | 0.14 mm² / flexible / > 10 N |
| | 1.5 mm² / solid / > 40 N |
| | 1.5 mm² / flexible / > 40 N |

### Insertion and withdrawal forces

| | |
|---|---|
| Result | Test passed |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 8 N |
| Withdraw strength per pos. approx. | 6 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 |
| 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 $R_1$ | 3.4 mΩ |
| Contact resistance $R_2$ | 3.6 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 | 16 |

Insulation resistance

| | |
|---|---|
| Specification | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 5 MΩ |

Air clearances and creepage distances |

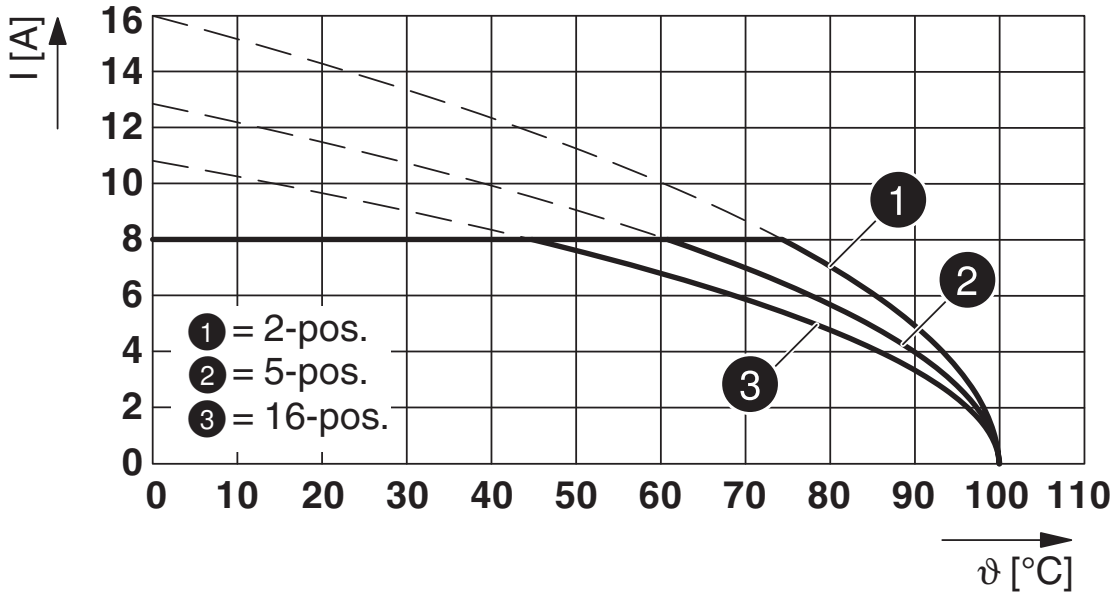
| | |
|---|---|
| Specification | IEC 60664-1:2007-04 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 600 |
| Rated insulation voltage (III/3) | 160 V |
| Rated surge voltage (III/3) | 2.5 kV |
| minimum clearance value - non-homogenous field (III/3) | 1.5 mm |
| minimum creepage distance (III/3) | 2 mm |
| 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) | 1.5 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 |

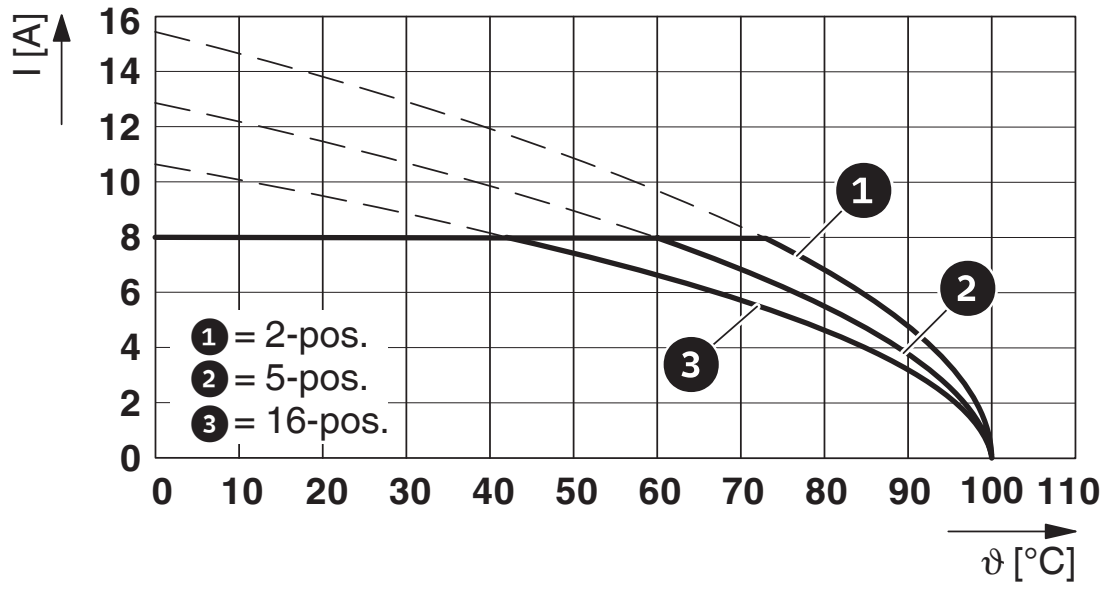
## Drawings

Diagram



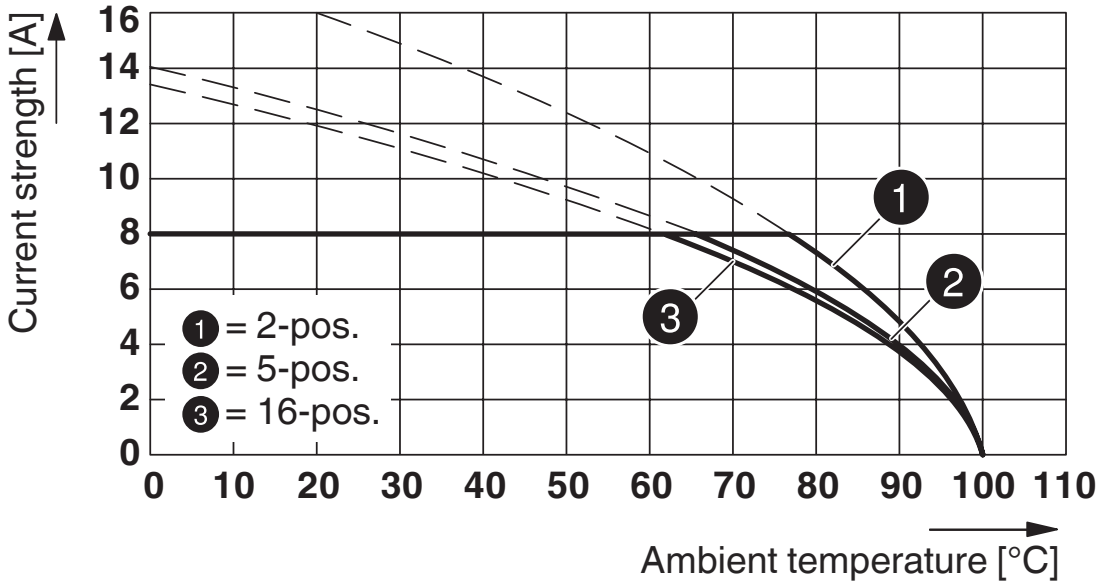

Type: MCV(W/R) 1,5/...-STF-3,81 with SMC 1,5/...-GF-3,81

Diagram



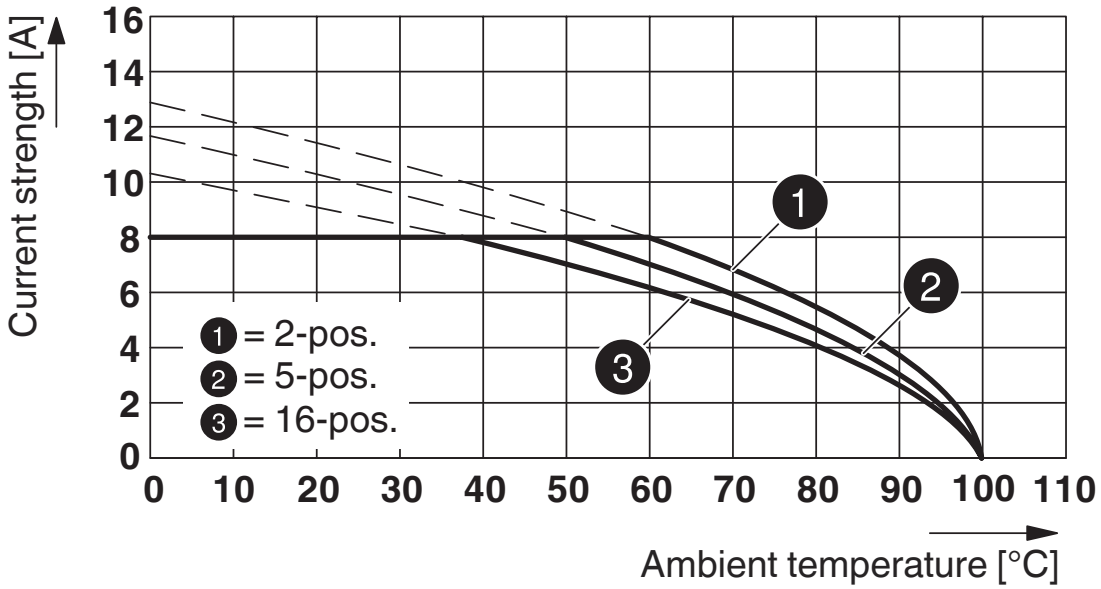

Type: MCV(W/R) 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81 P...THR

Diagram



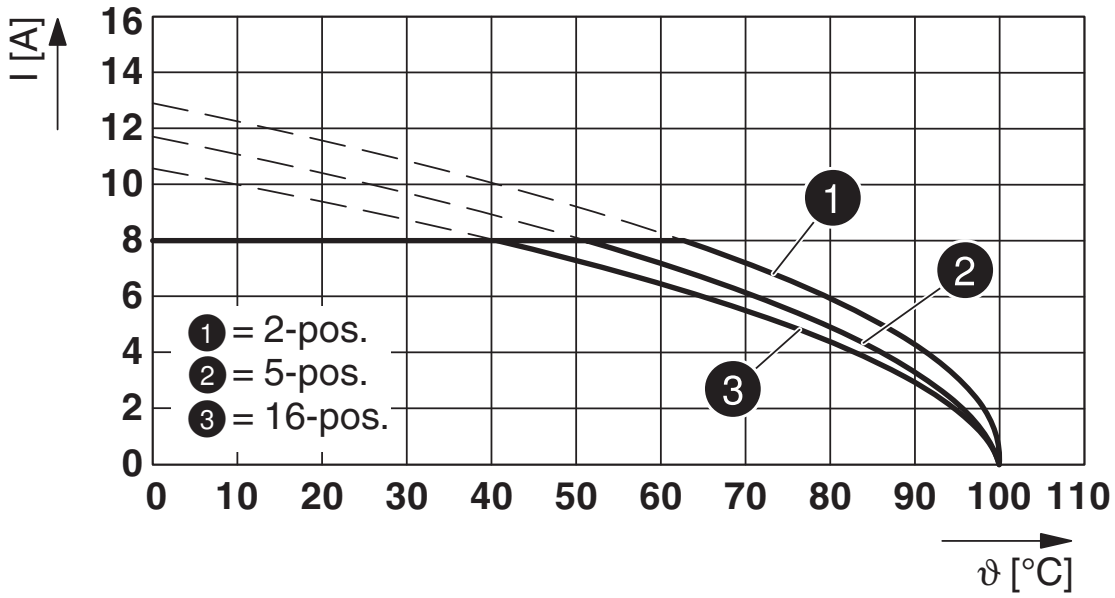

Type: MCV(W/R) 1,5/...-STF-3,81 with IMC 1,5/...-STGF-3,81

Diagram



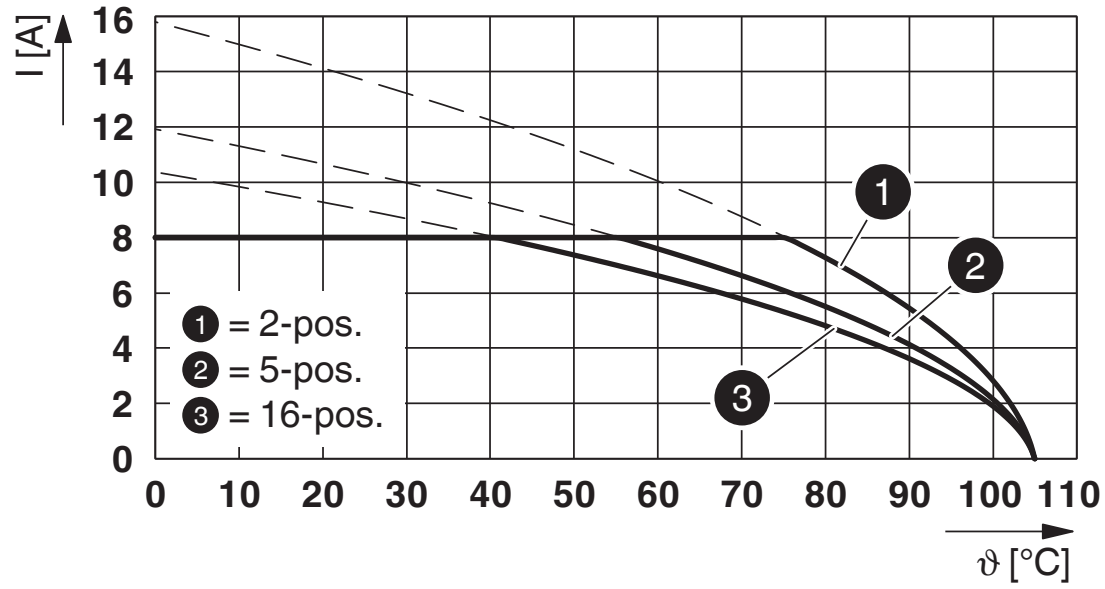

Type: MCVR 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81

Diagram



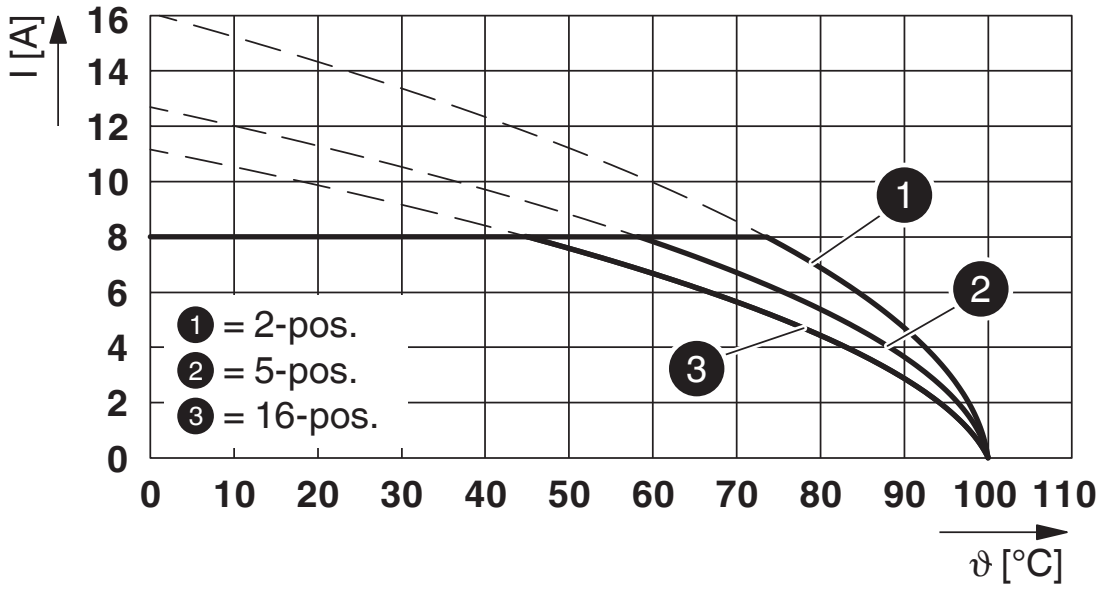

Type: MCV(W/R) 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81

Diagram



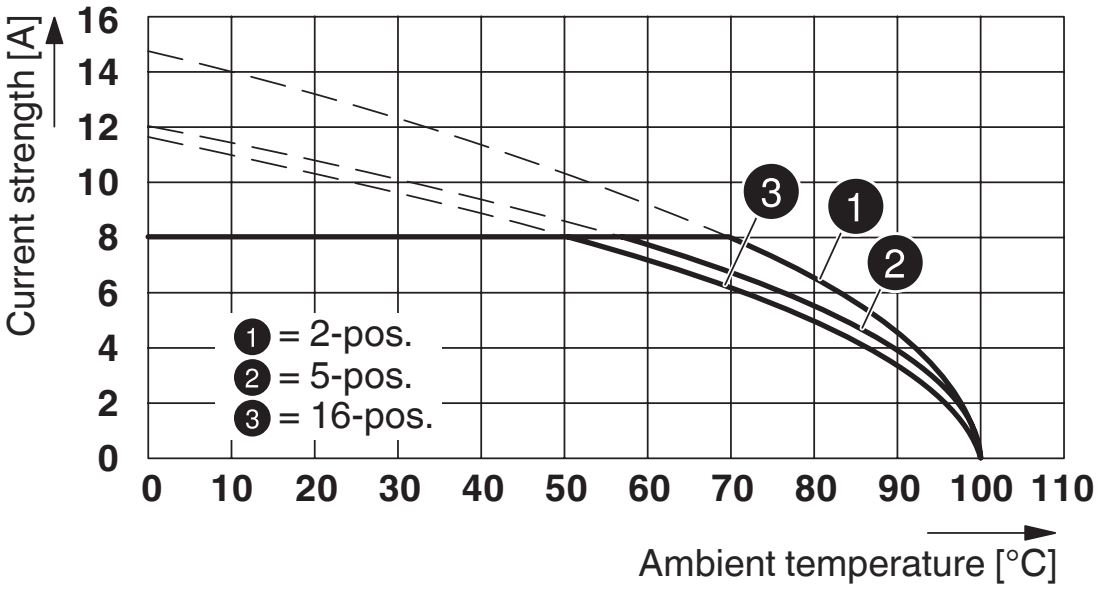

Type: MCVR 1,5/...-STF-3,81 with MCDV 1,5/...-GF-3,81

Diagram



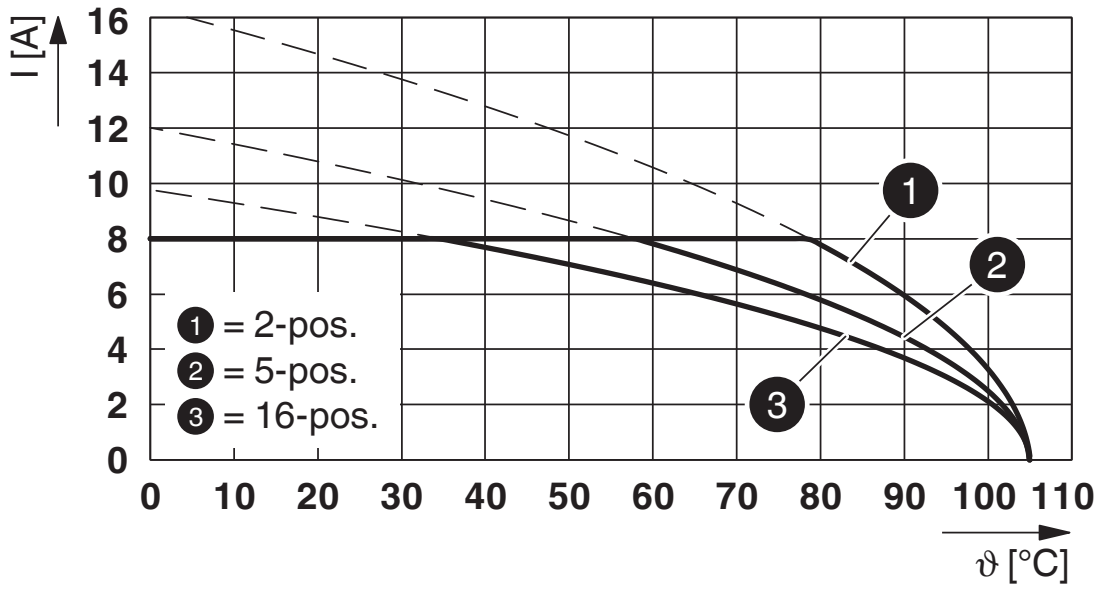

Type: MCV(W/R) 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81

Diagram



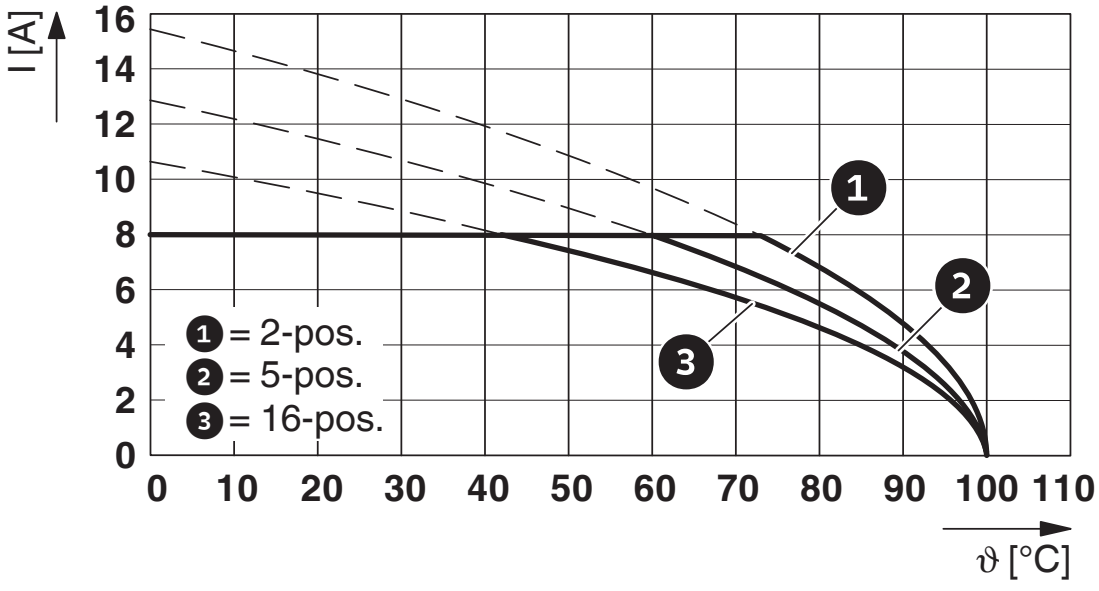

Type: MCVR 1,5/...-STF-3,81 with MCVU 1,5/...-GFD-3,81

Diagram



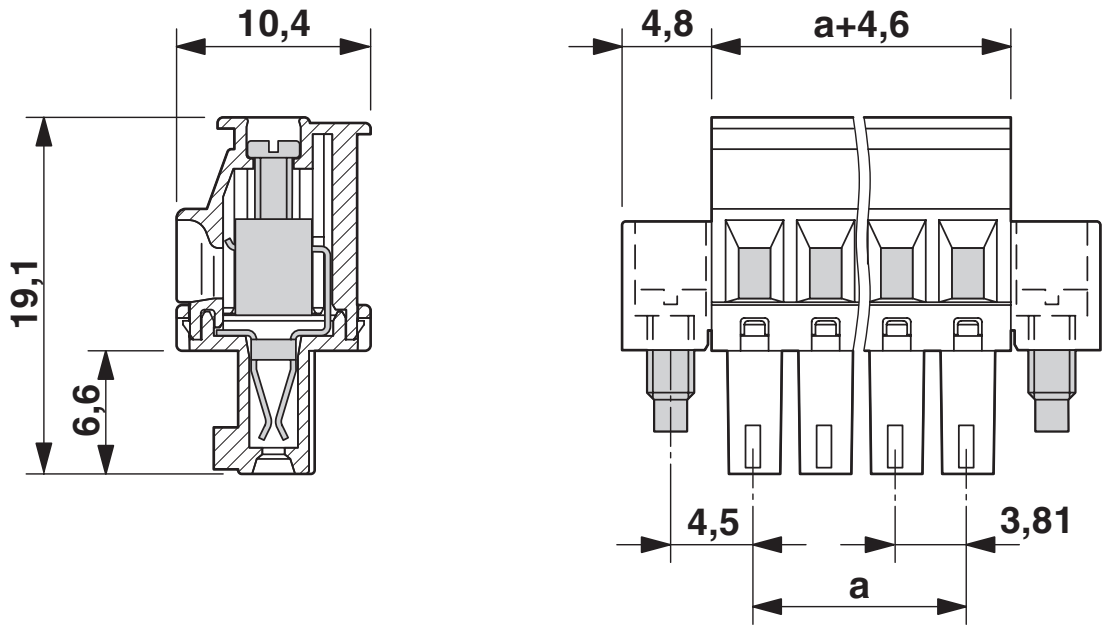

Type: MCVR 1,5/...-STF-3,81 with MCDV 1,5/...-G1F-3,81

Diagram

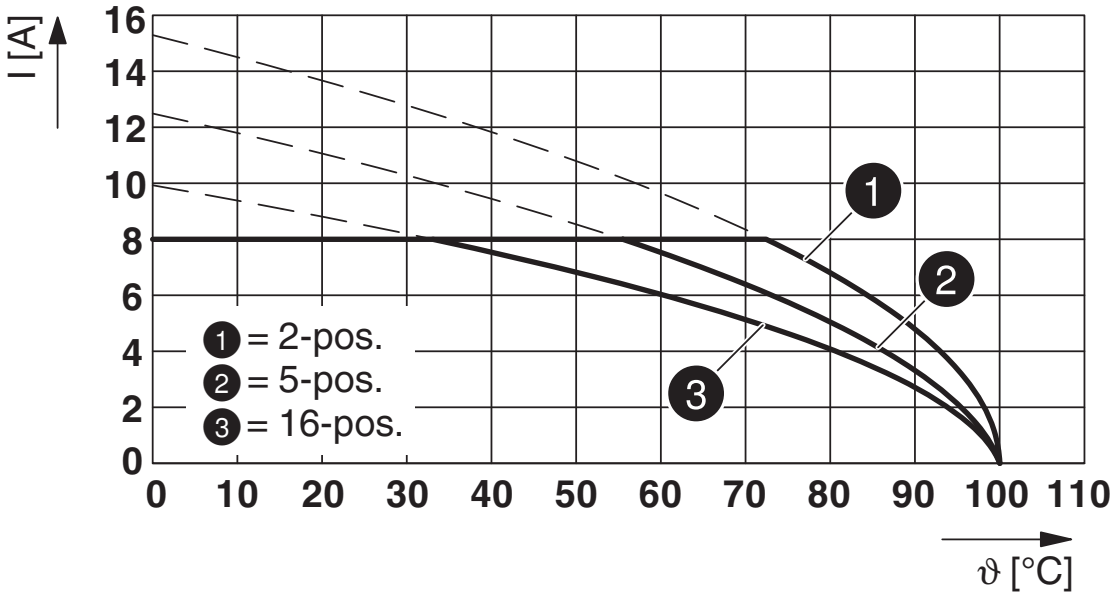



Type: MCV(W/R) 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81 P...THR

Dimensional drawing




Diagram




Type: MCV(W/R) 1,5/...-STF-3,81 with MCD 1,5/...-G1F-3,81

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1828362

**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 |

## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

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

## 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

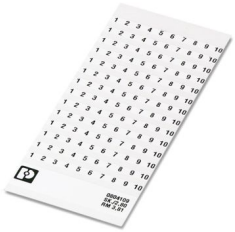
| | |
|---|---|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |

## 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

## B-STIFT - Marker pen

1051993

https://www.phoenixcontact.com/us/products/1051993

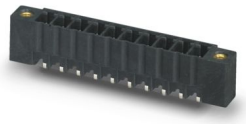


Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

## MCV 1,5/ 4-GF-3,81 P14 THR - PCB header

1707230

https://www.phoenixcontact.com/us/products/1707230



PCB headers, nominal cross section: 1.5 $mm^2$, color: black, 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: MCV 1,5/..-GF-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: Screw locking mechanism, mounting: Threaded flange, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

# MCVR 1,5/ 4-STF-3,81 - PCB connector

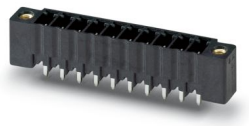
1828362

https://www.phoenixcontact.com/us/products/1828362

## MCV 1,5/ 4-GF-3,81 P26 THR - PCB header

1707654

https://www.phoenixcontact.com/us/products/1707654



PCB headers, nominal cross section: 1.5 mm$^2$, color: black, 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: MCV 1,5/..-GF-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: Screw locking mechanism, mounting: Threaded flange, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

## MCD 1,5/ 4-G1F-3,81 - PCB header

1842937

https://www.phoenixcontact.com/us/products/1842937



PCB headers, nominal cross section: 1.5 mm$^2$, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 8, number of rows: 2, number of positions: 4, number of connections: 8, product range: MCD 1,5/..-G1F, pitch: 3.81 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 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, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

Phoenix Contact 2024 © - all rights reserved
https://www.phoenixcontact.com

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