

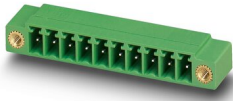
# Printed-circuit board connector - MC 1,5/10-GF-3,81



1827949

<https://www.phoenixcontact.com/in/products/1827949>

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PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: MC 1,5/..-GF, pitch: 3.81 mm, screw head form: L Slotted, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: Screw locking, mounting: Threaded flange, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Screwable flange for superior mechanical stability
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Commercial Data

Order Key	1827949
Packing unit	100 pc
Minimum order quantity	100 pc
Sales Key	AAA
Product Key	AABSBB
Catalog Page	Page 225 (C-1-2013)
GTIN	4017918050399
Weight per Piece (including packing)	3.728 g
Weight per Piece (excluding packing)	3.38 g
Customs tariff number	85366930
Country of origin	DE

# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Technical Data

### Product properties

Type	Standard
Number of positions	10
Number of connections	10
Number of rows	1
Connector system	MINI COMBICON
Mounting flange	Threaded flange
Number of potentials	10
Pin layout	Linear pinning

### Electrical properties

Maximum load current	8 A
Rated voltage (II/2)	250 V
Rated voltage (III/2)	160 V
Rated surge voltage (II/2)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (III/3)	2.5 kV
Nominal voltage $U_N$	160 V
Nominal current $I_N$	8 A
Nominal current $I_N$	8 A

### Mounting

Drive form screw head	Slotted (L)
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### 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 $\mu\text{m}$ Sn)
Metal surface contact area (middle layer)	Nickel (1 - 3 $\mu\text{m}$ Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 $\mu\text{m}$ Sn)
Metal surface soldering area (middle layer)	Nickel (1 - 3 $\mu\text{m}$ Ni)

#### Material data - housing

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

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1827949

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## Dimensions

Dimensional drawing	
Width	48.49 mm
Height	10.3 mm
Installed height	6.9 mm
Length of the solder pin	3.4 mm
Length	9.2 mm
Length of the solder pin	3.4 mm
Pin dimensions	0.8 x 0.8 mm
Hole diameter	1.2 mm
Pitch	3.81 mm

## 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 <sup>2</sup> / solid / > 7 N
	0.14 mm <sup>2</sup> / flexible / > 7 N
	1.5 mm <sup>2</sup> / solid / > 40 N
	1.5 mm <sup>2</sup> / 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
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### Contact holder in insert

Specification	IEC 60512-15-1:2008-05
Result	Test passed
Test force per pos.	21 N

### Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
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1827949

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Result	Test passed
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## 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

## Electrical tests

### Electrical properties

Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	1.3 mΩ
Pollution degree	2

### 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	IIIa
Comparative tracking index (IEC 60112:2003-01)	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

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## 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 - 60.1 Hz)
Sweep speed	5g (60.1 - 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 m $\Omega$
Contact resistance $R_2$	1.5 m $\Omega$
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 M $\Omega$

### 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
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	1.39 kV

### Shocks

Specification	IEC 60068-2-27:2008-02
Pulse shape	Semi-sinusoidal
Acceleration	30g
Shock duration	18 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

### Ambient conditions

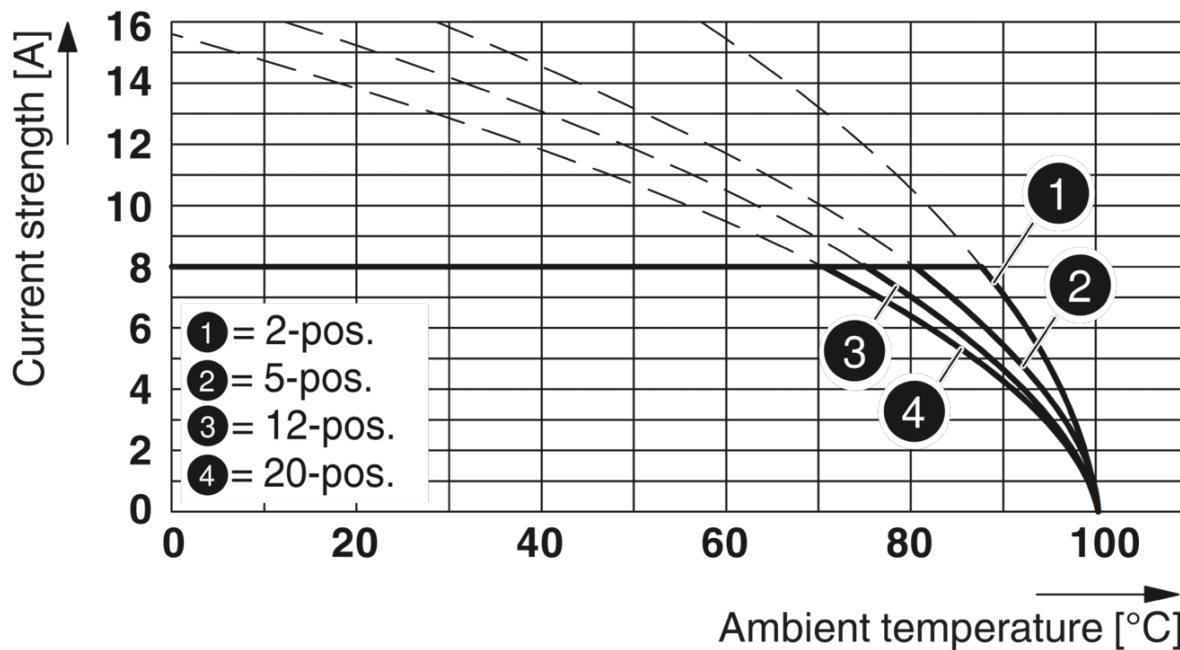
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
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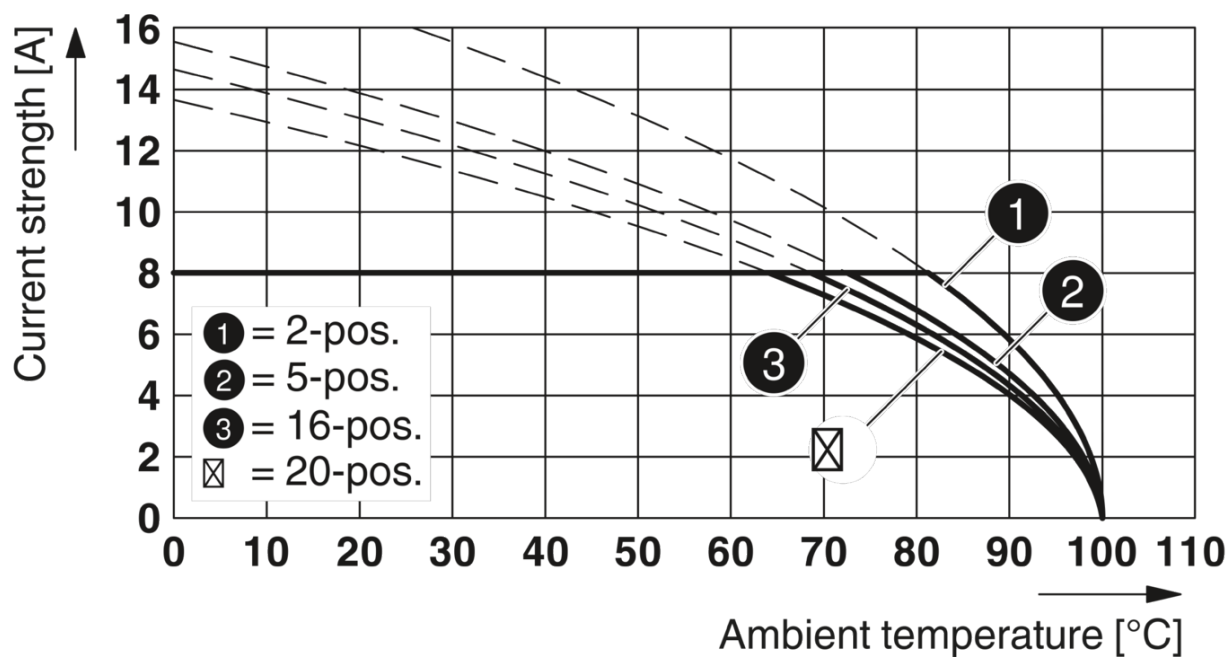
Drawings

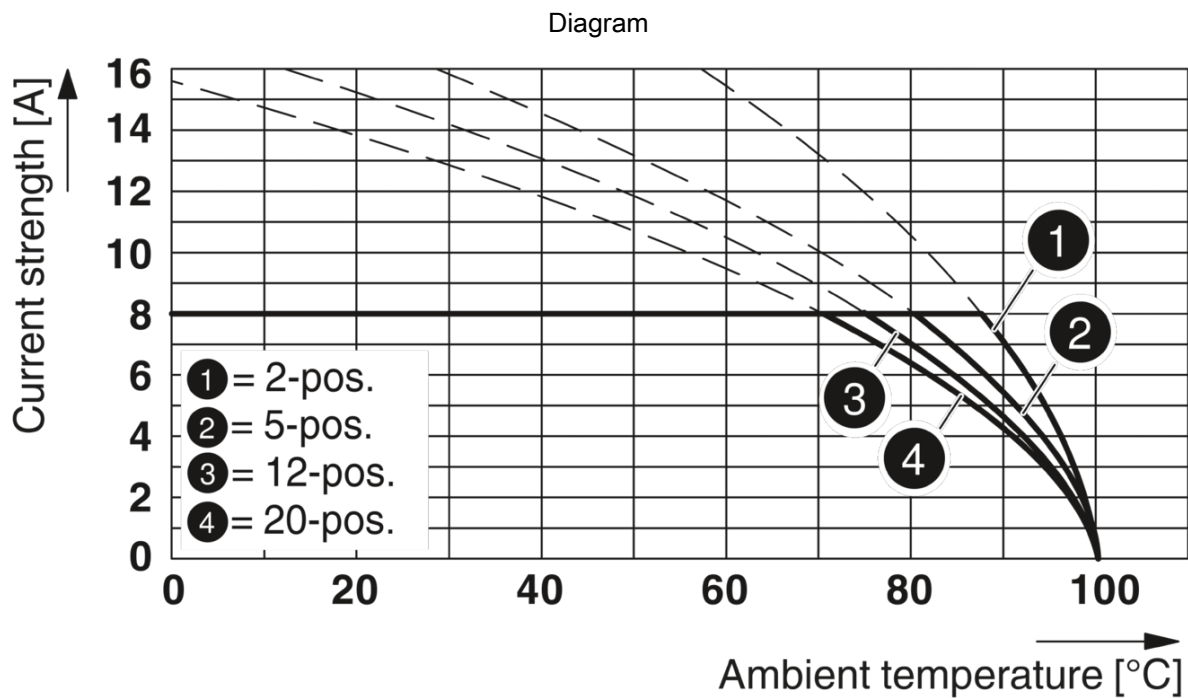
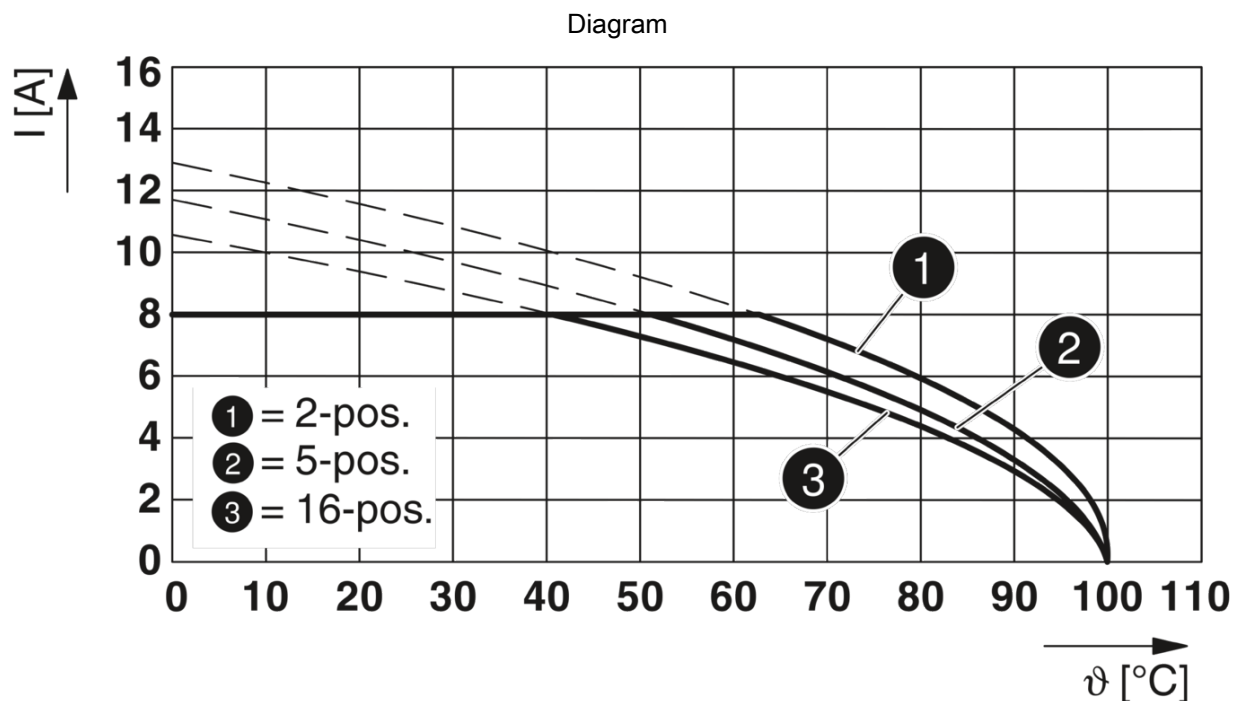
Diagram



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

Diagram



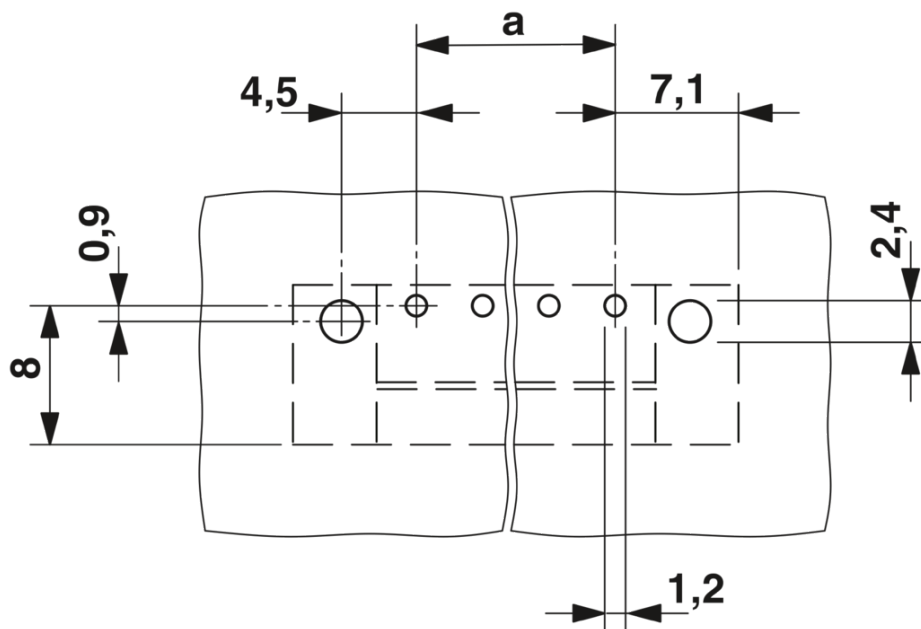




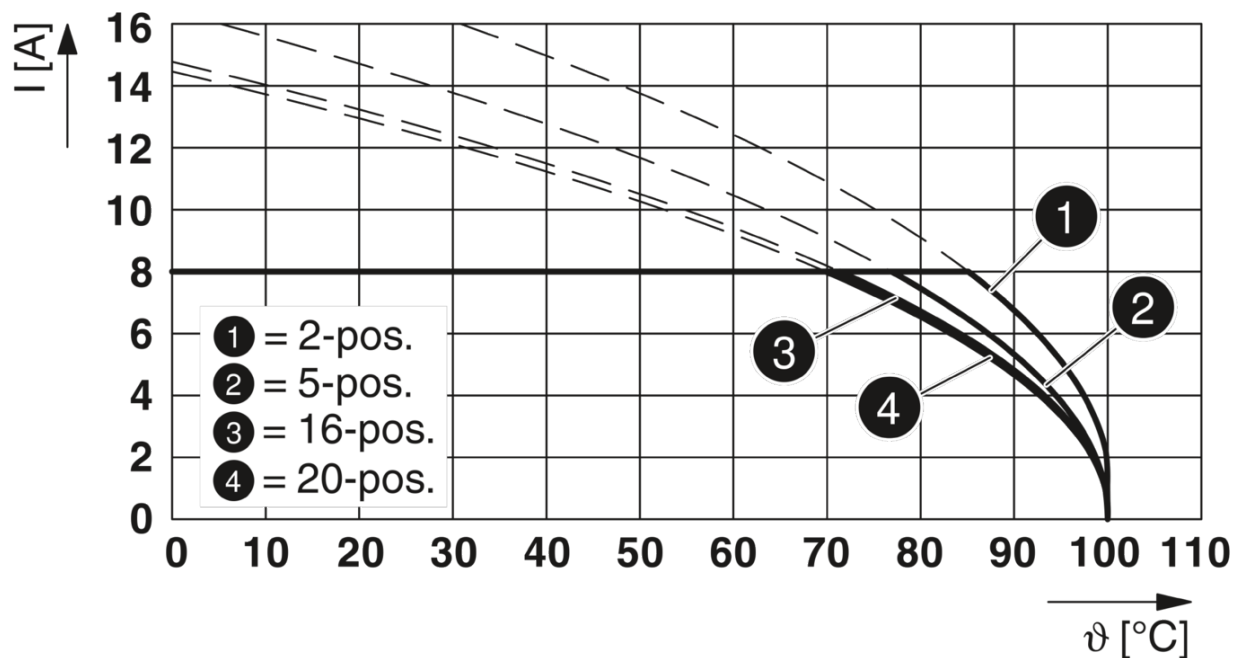
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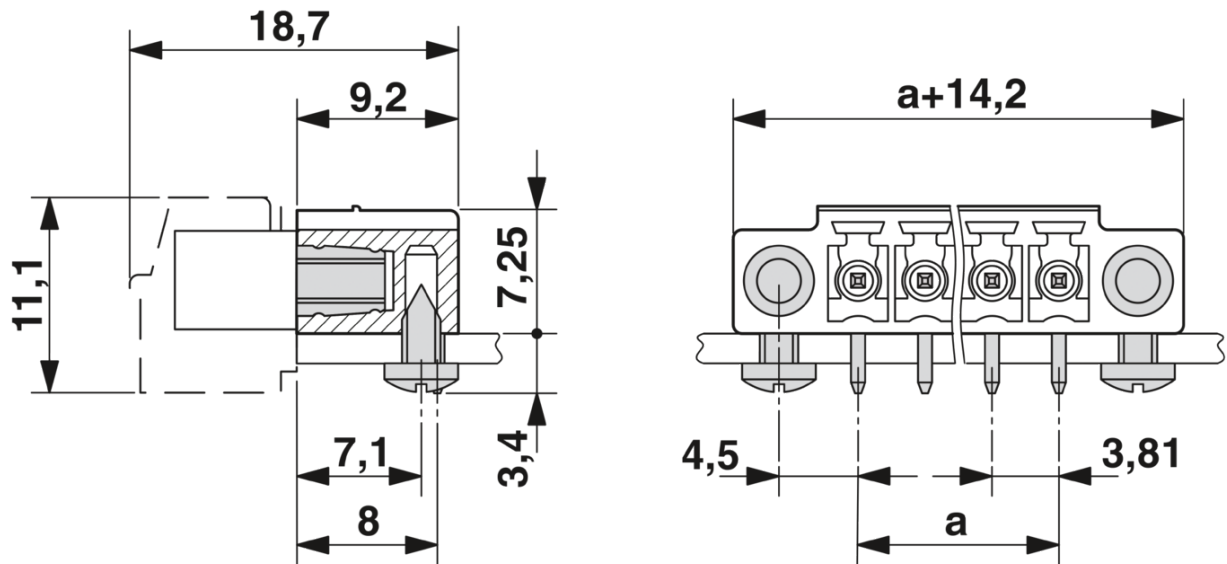
Drilling plan/solder pad geometry



Diagram



Dimensional drawing




# Printed-circuit board connector - MC 1,5/10-GF-3,81




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## Approvals

CSA 	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
Use group B				
	300 V	8 A	-	-
Use group D				
	300 V	8 A	-	-

IECEE CB Scheme 	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
	160 V	8 A	-	-

## EAC

cULus Recognized 	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
Use group B				
	300 V	8 A	-	-
Use group D				
	300 V	8 A	-	-

VDE Gutachten mit Fertigungsüberwachung 	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
	160 V	8 A	-	-

# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Classifications

### ECLASS

ECLASS-9.0	27440402
ECLASS-10.0.1	27440402
ECLASS-11.0	27460201

### ETIM

ETIM 6.0	EC002637
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### UNSPSC

UNSPSC 19.0	39121409
UNSPSC 20.0	39121409
UNSPSC 21.0	39121409

# Printed-circuit board connector - MC 1,5/10-GF-3,81



1827949

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## Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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# Printed-circuit board connector - MC 1,5/10-GF-3,81



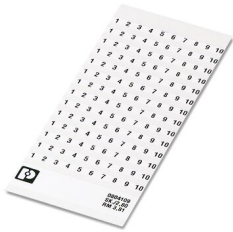
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## Accessories

### Marker card

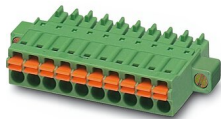
Marker card - SK 3,81/2,8:FORTL.ZAHLEN - 0804109



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

## Printed-circuit board connector

Printed-circuit board connector - FMC 1,5/10-STF-3,81 - 1748435



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: FMC 1,5/..-STF, pitch: 3.81 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

# Printed-circuit board connector - MC 1,5/10-GF-3,81

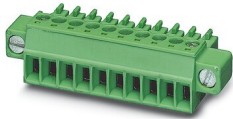


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## Printed-circuit board connector

Printed-circuit board connector - MC 1,5/10-STF-3,81 - 1827787



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: MC 1,5/..-STF, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## Printed-circuit board connector

Printed-circuit board connector - MCVR 1,5/10-STF-3,81 - 1828427



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, 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 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Printed-circuit board connector

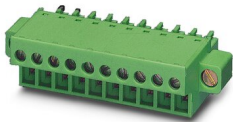
Printed-circuit board connector - MCVW 1,5/10-STF-3,81 - 1828579



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: MCVW 1,5/..-STF, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -90 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## Printed-circuit board connector

Printed-circuit board connector - FRONT-MC 1,5/10-STF-3,81 - 1850932



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: FRONT-MC 1,5/..-STF, pitch: 3.81 mm, connection method: Front screw connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard



# Printed-circuit board connector - MC 1,5/10-GF-3,81

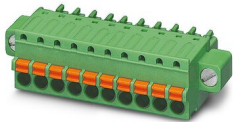


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## Printed-circuit board connector

Printed-circuit board connector - FK-MCP 1,5/10-STF-3,81 - 1851313



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, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: FK-MCP 1,5/...-STF, pitch: 3.81 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

## Printed-circuit board connector

Printed-circuit board connector - MCC 1/10-STZF-3,81 - 1852448



PCB connector, nominal cross section: 1 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: MCC 1/...-STZF, pitch: 3.81 mm, connection method: Crimp connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard, Corresponding female crimp contacts with current [A] and conductor cross section range [mm<sup>2</sup>] data: 5A/MCC-MT 0,2-0,35 (1859988); 8A/MCC-MT 0,5-1,0 (1859991)

# Printed-circuit board connector - MC 1,5/10-GF-3,81

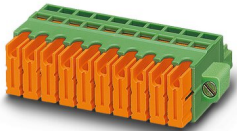


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## Printed-circuit board connector

Printed-circuit board connector - QC 0,5/10-STF-3,81 - 1897623



PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: green, nominal current: 6 A, rated voltage (III/2): 200 V, contact surface: Tin, type of contact: Female connector, number of potentials: 10, number of rows: 1, number of positions: 10, number of connections: 10, product range: QC 0,5/...-STF, pitch: 3.81 mm, connection method: Displacement connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: MINI COMBICON, Locking: Screw locking, mounting: Screw flange, type of packaging: packed in cardboard

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## Fiber optic

Fiber optic - MC 1,5/10-LWL 1,5-3,81 - 1841174

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 1.5 mm



# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Fiber optic

Fiber optic - MC 1,5/10-LWL 2,3-3,81 - 1841190

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 2.3 mm



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## Fiber optic

Fiber optic - MC 1,5/10-LWL 4-3,81 - 1841213

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 4 mm



# Printed-circuit board connector - MC 1,5/10-GF-3,81



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## Coding profile

Coding profile - CP-MSTB - 1734634

Coding profile, is inserted into the slot on the plug or inverted header, red insulating material



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