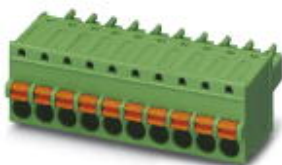


# Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

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PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, connection method: Push-in spring connection, color: green, contact surface: Tin




The figure shows a 10-position version of the product

## Your advantages

- ✓ Time saving push-in connection, tools not required
- ✓ Defined contact force ensures that contact remains stable over the long term
- ✓ Intuitive use through colour coded actuation lever
- ✓ Operation and conductor connection from one direction enable integration into front of device
- ✓ Quick and convenient testing using integrated test option



## Key Commercial Data

Packing unit	50 pc
Minimum order quantity	50 pc
GTIN	 4 017918 109967
GTIN	4017918109967
Weight per Piece (excluding packing)	0.002 kg
Custom tariff number	85366990
Country of origin	Germany

## Technical data

### Item properties

Brief article description	Printed-circuit board connector
Plug-in system	MINI COMBICON
Type of contact	Female connector
Range of articles	FK-MCP 1,5/...-ST
Pitch	3.81 mm
Number of positions	2

# Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

## Technical data

### Item properties

Connection method	Push-in spring connection
Locking	without
Number of levels	1

### Electrical parameters

Rated current	8 A
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV

### Connection capacity

Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG / kcmil	26 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / -
Stripping length	9 mm

### Specifications for ferrules

Recommended crimping pliers	1212034 CRIMPFOX 6
Ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm <sup>2</sup> ; Length: 7 mm ... 9 mm
	Cross section: 0.34 mm <sup>2</sup> ; Length: 7 mm ... 9 mm
	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 9 mm
	Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 9 mm
	Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 9 mm
	Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm ... 9 mm
Recommended crimping pliers	1212034 CRIMPFOX 6
Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.34 mm <sup>2</sup> ; Length: 8 mm ... 9 mm
	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 9 mm

### 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

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

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## Technical data

### Material data - housing

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

### Material data – actuating element

Insulating material	POM
CTI according to IEC 60112	600
Flammability rating according to UL 94	HB

### Dimensions for the product

Length [ l ]	21 mm
Width [ w ]	8.41 mm
Height [ h ]	12.4 mm
Pitch	3.81 mm
Height (without solder pin)	12.4 mm
Dimension a	3.81 mm

### Packaging information

Type of packaging	packed in cardboard
Pieces per package	50
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

### Termination and connection method

Conductor connection test	The stripped-off ends of the largest conductor can be completely inserted in the opening of the terminal point without using excessive force.
Test result	Test passed
Test – repeated connection and release	IEC 60999-1:1999-11
	Test passed
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 <sup>2</sup> / solid / > 10 N
	0.14 mm <sup>2</sup> / flexible / > 10 N
	1.5 mm <sup>2</sup> / solid / > 40 N
	1.5 mm <sup>2</sup> / flexible / > 40 N

### Mechanical tests according to standard

# Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

## Technical data

### Mechanical tests according to standard

Test specification	IEC 61984
Visual examination	Test passed IEC 60512-1-1:2002-02
Dimensional test	Test passed IEC 60512-1-2:2002-02
Resistance of marking	Test passed IEC 60068-2-70:1995-12
Result	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	9 N
Withdraw strength per pos. approx.	7 N
Polarization and coding	Test passed IEC 60512-13-5:2006-02
Result	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	31 N

### Air clearances and creepage distances

Insulating material group	I
Voltage	160 V
Rated insulation voltage (III/3)	160 V
Rated insulation voltage (III/2)	160 V
Rated insulation 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

### Electrical tests - Function

Specification	IEC 60999-1:1999-11
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### Temperature cycles

Specification	IEC 60999-1:1999-11
Temperature cycles	192

### Current carrying capacity / derating curves

Specification	IEC 61984
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### Mechanical tests (A)

Test specification	IEC 61984
Insertion strength per pos. approx.	9 N
Withdraw strength per pos. approx.	7 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 <sub>1</sub>	1.6 mΩ

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## Technical data

### Durability tests (B)

Insertion/withdrawal cycles	25
Contact resistance $R_2$	1.6 m $\Omega$
Impulse withstand voltage at sea level	2.95 kV
Power-frequency withstand voltage	1.39 kV
Insulation resistance, neighboring positions	> 50 G $\Omega$

### Climatic tests (D)

Specification	ISO 6988:1985-02
Cold stress	-40 °C/2 h
Thermal stress	100 °C/168 h
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /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)

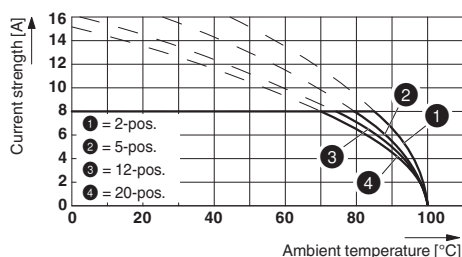
Specification	IEC 61984:2008-10
Result, degree of protection, IP code	Finger safety with IP20 test finger

### Environmental Product Compliance

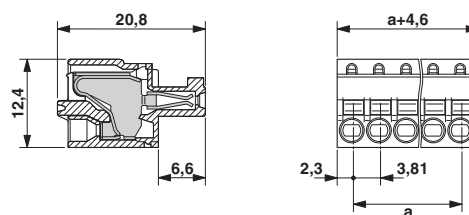
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

Diagram



Dimensional drawing



Type: FK-MCP 1,5/...-ST(F)-3,81 with MC 1,5/...-G(F)-3,81 P.. THR(R...)

## Classifications

eCl@ss

eCl@ss 4.0	272607xx
eCl@ss 4.1	27260701
eCl@ss 5.0	27260701
eCl@ss 5.1	27260700
eCl@ss 6.0	27260700

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## Classifications

### eCl@ss

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

### UNSPSC

UNSPSC 6.01	30211810
UNSPSC 7.0901	39121409
UNSPSC 11	39121409
UNSPSC 12.01	39121409
UNSPSC 13.2	39121409

## Approvals

### Approvals

#### Approvals

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

#### Ex Approvals

### Approval details

CSA		<a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>	13631
		B	
Nominal voltage UN			300 V
Nominal current IN			8 A
mm <sup>2</sup> /AWG/kcmil			28-16

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## Approvals

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DE1-60987-B1B2
Nominal voltage UN	160 V		
Nominal current IN	8 A		
mm <sup>2</sup> /AWG/kcmil	0.2-1.5		

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

EAC			B.01742
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cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	E60425-19920306
Nominal voltage UN	300 V		
Nominal current IN	8 A		
mm <sup>2</sup> /AWG/kcmil	28-16		

## Accessories

### Accessories

#### Crimping tool

Crimping pliers - CRIMPFOX 6 - 1212034



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp

#### Labeled terminal marker

## Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

### 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

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### 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

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### Terminal marking

Marker card - SK U/2,8 WH:UNBEDRUCKT - 0803883



Marker card, Sheet, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, Office printing systems, mounting type: adhesive, for terminal block width: 210 mm, lettering field size: 186 x 2.8 mm

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### Test plug terminal block

Test plugs - MPS-MT 1-S - 1944372



Test plug, consisting of 1.0 mm Ø test pin and 2.0 mm Ø socket

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### Additional products

Feed-through header - MCV 1,5/ 2-G-3,81 P14 THR - 1707007



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, User information and design recommendations for through hole reflow technology can be found under "Downloads"



## Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

### Accessories

#### Feed-through header - MCV 1,5/ 2-G-3,81 P26 THR - 1707421

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, User information and design recommendations for through hole reflow technology can be found under "Downloads"



#### Header - MCV 1,5/ 2-G-3,81 P26 THRR32 - 1713554

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, User information and design recommendations for through hole reflow technology can be found under "Downloads"



#### Printed-circuit board connector - MC 1,5/ 2-G-3,81 P20 THRR32 - 1782572

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: black, contact surface: Tin, mounting: THR soldering, User information and design recommendations for through hole reflow technology can be found under "Downloads"



#### Printed-circuit board connector - MC 1,5/ 2-G-3,81 - 1803277

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering



#### Printed-circuit board connector - MCV 1,5/ 2-G-3,81 - 1803426

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering



## Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

### Accessories

#### Printed-circuit board connector - SMC 1,5/ 2-G-3,81 - 1827279

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering



#### Feed-through header - MCD 1,5/ 2-G-3,81 - 1829950

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.



#### Feed-through header - MCDV 1,5/ 2-G-3,81 - 1830402

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.



#### Feed-through header - MCVDU 1,5/ 2-G-3,81 - 1837450

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering



#### Printed-circuit board connector - MCD 1,5/ 2-G1-3,81 - 1843075

PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.



## Printed-circuit board connector - FK-MCP 1,5/ 2-ST-3,81 - 1851041

### Accessories

Feed-through header - MCDV 1,5/ 2-G1-3,81 - 1847725



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Wave soldering, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

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Feed-through header - EMCV 1,5/ 2-G-3,81 - 1860647



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Press-in technology

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Feed-through header - EMC 1,5/ 2-G-3,81 - 1897801



PCB headers, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2, pitch: 3.81 mm, color: green, contact surface: Tin, mounting: Press-in technology

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