

1851232

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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, type of contact: Female connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, 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

### 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
- · Screwable flange for superior mechanical stability
- · Quick and convenient testing using integrated test option



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### **Commercial Data**

Item number	1851232
Packing unit	50 pc
Minimum order quantity	50 pc
Sales Key	AAB
Product Key	AABFNB
Catalog Page	Page 199 (C-1-2013)
GTIN	4017918110307
Weight per Piece (including packing)	3.051 g
Weight per Piece (excluding packing)	2.623 g
Customs tariff number	85366990
Country of origin	DE



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### **Technical Data**

#### Product properties

Туре	Standard
Product line	COMBICON Connectors S
Product type	PCB plug
Number of positions	2
Pitch	3.81 mm
Number of connections	2
Number of rows	1
Mounting flange	Screw flange
Number of potentials	2

#### Electrical properties

Nominal current I <sub>N</sub>	8 A
Nominal voltage U <sub>N</sub>	160 V
Pollution degree	3
Contact resistance	1.4 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

#### Connection data

#### Connection technology

Туре	Standard
Connector system	MINI COMBICON
Nominal cross section	1.5 mm <sup>2</sup>
Type of contact	Female connector

#### Interlock

Locking type	Screw locking
Mounting flange	Screw flange
Torque	0.3 Nm

#### Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross section solid	0.14 mm² 1.5 mm²
Conductor cross section flexible	0.14 mm² 1.5 mm²
Conductor cross section AWG	26 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 0.75 mm²



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Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / -
Stripping length	9 mm
Specifications for ferrules without insulating collar	
recommended crimping tool	1212034 CRIMPFOX 6
ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm²; Length: 7 mm
Specifications for ferrules with insulating collar	
recommended crimping tool	1212034 CRIMPFOX 6
ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.14 mm²; Length: 8 mm

#### 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

Housing color	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

#### Material data – actuating element

Insulating material	POM
Insulating material group	1
CTI according to IEC 60112	600
Flammability rating according to UL 94	НВ

#### **Dimensions**

Dimensional drawing	h
Width	18.01 mm
Height	12.4 mm



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Installed height	12.4 mm
Length	20.8 mm
Pitch	3.81 mm
ounting	
Tightening torque	0.3 Nm
echanical tests	
Test for conductor damage and slackening	
Specification	IEC 60999-1:1999-11
Result	Test passed
Repeated connection and disconnection	
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	0.14 mm² / solid / > 10 N
setpoint/actual value	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
Contact holder in insert	
Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed
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



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Result	Test passed
vironmental and real-life conditions	
Vibration test	IFC 00000 0 0:0007 40
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 <sub>1</sub>	1.4 mΩ
Contact resistance R <sub>2</sub>	1.5 mΩ
Insertion/withdrawal cycles	25
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	IEC 60068-2-27:2008-02
Specification	
Pulse shape	Half-sine
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
ectrical 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 ΜΩ
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#### Temperature cycles

remperature cycles	
Specification	IEC 60999-1:1999-11
Result	Test passed
At a decrease and a second distance by	
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
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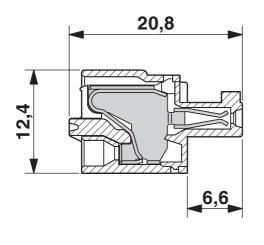


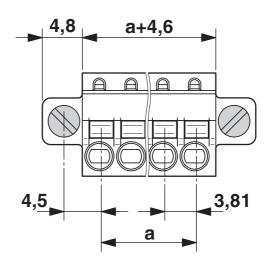
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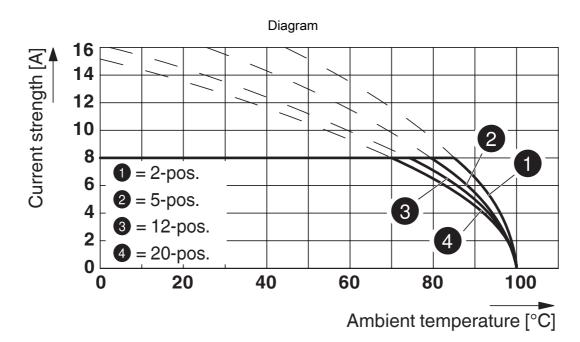
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### **Drawings**

#### Dimensional drawing







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



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### Approvals

CSA 6	Nominal Voltage $U_N$	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
Use group B				
	300 V	8 A	28 - 16	-

IECEE CB Scheme	Nominal Voltage U <sub>N</sub>	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
	160 V	8 A	-	0.2 - 1.5

#### EAC III

cULus Recognized	Nominal Voltage U <sub>N</sub>	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
Use group B				
	300 V	8 A	28 - 16	-

VDE report with production monitoring	Nominal Voltage U <sub>N</sub>	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
	160 V	8 A	-	0.2 - 1.5



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### Classifications

#### **ECLASS**

ECLASS-9.0		27440309
ECLASS-10.0.	1	27440309
ECLASS-11.0		27460202
ETIM		
ETIM 8.0		EC002638
LINSPSC		

#### **UNSPSC**

UNSPSC 21.0	39121409
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### **Environmental Product Compliance**

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



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#### Accessories

#### Marker card

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



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

#### Screwdriver

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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#### PCB header

PCB header - MCD 1,5/ 2-GF-3,81 - 1830101



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 4, number of rows: 2, number of positions: 2, number of connections: 4, product range: MCD 1,5/..-GF, 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: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: Screw locking, 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.

#### PCB header

PCB header - MCDV 1,5/ 2-GF-3,81 - 1830253



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 4, number of rows: 2, number of positions: 2, number of connections: 4, product range: MCDV 1,5/..-GF, pitch: 3.81 mm, 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, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.



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#### PCB header

PCB header - MCDV 1,5/ 2-G1F-3,81 - 1842762



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 4, number of rows: 2, number of positions: 2, number of connections: 4, product range: MCDV 1,5/..-G1F, pitch: 3.81 mm, 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, In combination with MCV plug components, both an MCVW and an MCVR plug must be used.

#### Printed-circuit board connector

Printed-circuit board connector - MCV 1,5/2-GF-3,81 P14 THR - 1707214



PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, 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: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: Screw locking, mounting: Threaded flange, type of packaging: packed in cardboard, User information and design recommendations for through hole reflow technology can be found under: Downloads



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#### Printed-circuit board connector

Printed-circuit board connector - MCV 1,5/ 2-GF-3,81 P26 THR - 1707638



PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, 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: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: Screw locking, mounting: Threaded flange, type of packaging: packed in cardboard, User information and design recommendations for through hole reflow technology can be found under: Downloads

#### Printed-circuit board connector

Printed-circuit board connector - MCD 1,5/2-G1F-3,81 - 1842911



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 4, number of rows: 2, number of positions: 2, number of connections: 4, 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: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: Screw locking, 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.



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#### Printed-circuit board connector

Printed-circuit board connector - MCV 1,5/ 2-GF-3,81 - 1830596



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

#### Crimping pliers

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,  $0.25~\text{mm}^2$  ...  $6.0~\text{mm}^2$ , lateral entry, trapezoidal crimp

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