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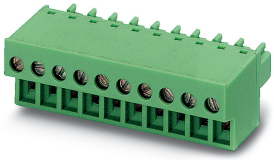
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Printed-circuit board connector - FRONT-MC 1,5/ 3-ST-3,81 - 1850673

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The figure shows a 10-position version of the product

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: 3, Number of rows: 1, Number of positions per row: 3, number of connections: 3, product range: FRONT-MC 1,5/..-ST, pitch: 3.81 mm, connection method: Front screw connection, conductor/PCB connection direction: 0 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Optimized for tight installation situations: operation and conductor connection from one direction



Key Commercial Data

Packing unit	1 pc
Minimum order quantity	250 pc
GTIN	4 017918 109868
GTIN	4017918109868
Weight per Piece (excluding packing)	4.210 g
Custom tariff number	85366990
Country of origin	Germany

Technical data

Item properties

Brief article description	Printed-circuit board connector
Connector system	MINI COMBICON
Type of contact	Female connector
Range of articles	FRONT-MC 1,5/..-ST

Printed-circuit board connector - FRONT-MC 1,5/ 3-ST-3,81 - 1850673

Technical data

Item properties

Pitch	3.81 mm
Number of positions	3
Drive form screw head	Slotted
Screw thread	M2
Locking	without
Number of rows	1
Number of connections	3
Number of potentials	3

Electrical parameters

Nominal current	8 A
Nom. voltage	160 V
Rated voltage (III/3)	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	Front screw connection
pluggable	Yes
Conductor cross section solid	0.14 mm² ... 1.5 mm²
Conductor cross section flexible	0.14 mm² ... 1.5 mm²
Conductor cross section AWG / kcmil	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	0.14 mm² ... 0.5 mm²
2 conductors with same cross section, flexible	0.14 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	9 mm
Torque	0.22 Nm ... 0.25 Nm

Specifications for ferrules

Ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm²; Length: 7 mm ... 9 mm
	Cross section: 0.34 mm²; Length: 7 mm ... 9 mm

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Technical data

Specifications for ferrules

	Cross section: 0.5 mm²; Length: 8 mm ... 9 mm
	Cross section: 0.75 mm²; Length: 8 mm ... 9 mm
	Cross section: 1 mm²; Length: 8 mm ... 9 mm
	Cross section: 1.5 mm²; Length: 9 mm
Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.25 mm²; Length: 8 mm ... 9 mm
	Cross section: 0.34 mm²; Length: 8 mm ... 9 mm
	Cross section: 0.5 mm²; Length: 8 mm ... 9 mm

Flange specifications

Type of locking	without

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

Dimensions for the product

Caption	Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center
Length [l]	21.7 mm
Width [w]	12.22 mm
Height [h]	12.3 mm
Pitch	3.81 mm
Height (without solder pin)	12.3 mm

Packaging information

Type of packaging	packed in cardboard
Pieces per package	250

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Technical data

Packaging information

Denomination packing units	Pcs.

Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
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
Conductor cross section / conductor type / tensile force	0.14 mm² / solid / > 10 N
	0.14 mm² / flexible / > 10 N
	1.5 mm² / solid / > 40 N
	1.5 mm² / 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.	7 N
Withdraw strength per pos. approx.	5 N
Polarization and coding	IEC 60512-13-5:2006-02
Contact holder in insert	IEC 60512-15-1:2008-05
Test force per pos.	24 N

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

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Technical data

Air clearances and creepage distances

Minimum creepage distance value (II/2)	1.6 mm

Current carrying capacity / derating curves

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

Mechanical tests (A)

Test specification	IEC 61984
Insertion strength per pos. approx.	7 N
Withdraw strength per pos. approx.	5 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	1.6 mΩ
Insertion/withdrawal cycles	25
Contact resistance R_2	1.7 mΩ
Impulse withstand voltage at sea level	2.95 kV

Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	20
Upper limiting temperature requirements <100 °C	Test passed

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^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

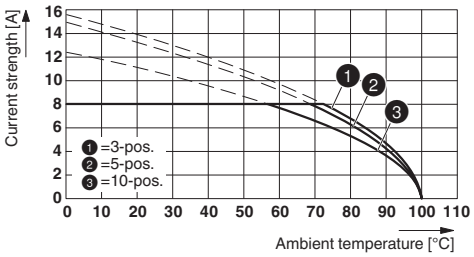
Environmental Product Compliance

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

Drawings

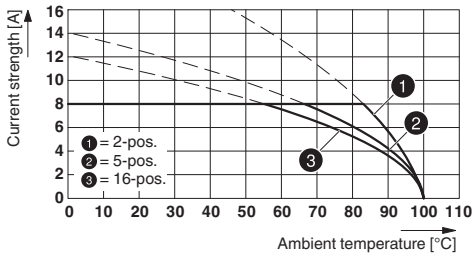
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Diagram



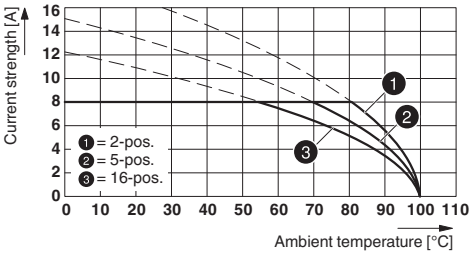
Type: FRONT-MC 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81

Diagram



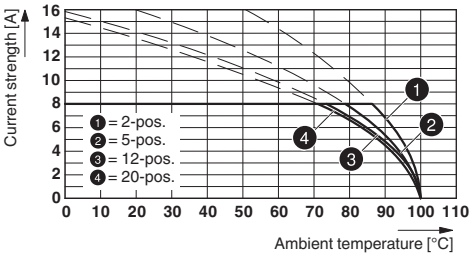
Type: FRONT-MC 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81

Diagram



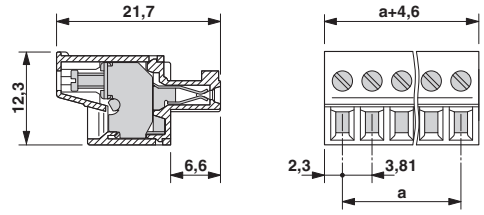
Type: FRONT-MC 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81

Diagram

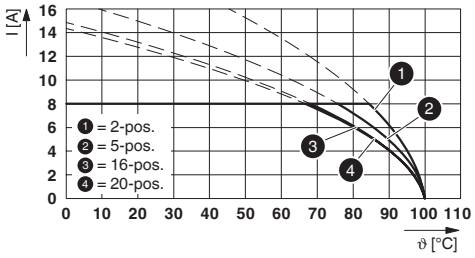


Type: FRONT-MC 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81

Dimensional drawing



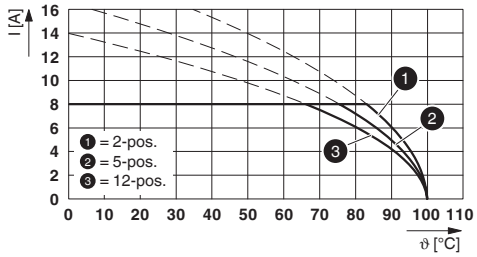
Diagram



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

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Diagram



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

Classifications

eCl@ss

eCl@ss 10.0.1	27440309
eCl@ss 11.0	27460202
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 9.0	27440309

ETIM

ETIM 3.0	EC001121
ETIM 4.0	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
UNSPSC 21.0	39121409

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Approvals

Approvals

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VDE Gutachten mit Fertigungsüberwachung / CSA / IECEE CB Scheme / EAC / cULus Recognized

Ex Approvals

Approval details

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
mm²/AWG/kcmil	0.2-1.5

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
mm²/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
mm²/AWG/kcmil	0.2-1.5

EAC — B.01687

Printed-circuit board connector - FRONT-MC 1,5/ 3-ST-3,81 - 1850673

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
mm²/AWG/kcmil	30-16	30-16

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