FRONT-MC 1,5/ 3-STF-3,81 - PCB connector

1850864

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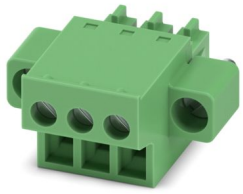


PCB connector, nominal cross section: 1.5 mm^2, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FRONT-MC 1,5/..-STF, pitch: 3.81 mm, connection method: Front screw connection, screw head form: L Slotted, conductor/PCB connection direction: 0 °, 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
- Screwable flange for superior mechanical stability
- Optimized for tight installation situations: operation and conductor connection from one direction

Commercial data

Item number	1850864
Packing unit	250 pc
Minimum order quantity	250 pc
Product key	AABALB
Catalog page	Page 195 (C-1-2013)
GTIN	4017918110024
Weight per piece (including packing)	4.845 g
Weight per piece (excluding packing)	4.707 g
Customs tariff number	85366990
Country of origin	DE

Technical data

Product properties

Product type	PCB connector
Product family	FRONT-MC 1,5/..-STF
Product line	COMBICON Connectors S
Type	Standard
Number of positions	3
Pitch	3.81 mm
Number of connections	3
Number of rows	1
Number of potentials	3
Mounting flange	Screw flange

Data management status

Article revision	16

Electrical properties

Nominal current I_N	8 A
Nominal voltage U_N	160 V
Contact resistance	1.6 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	Front screw connection
Conductor/PCB connection direction	0 °
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	0.14 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
Drive form screw head	Slotted (L)
Tightening torque	0.22 Nm ... 0.25 Nm

Specifications for ferrules without insulating collar

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
	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

Specifications for ferrules with insulating collar

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

Material specifications

Material data - contact

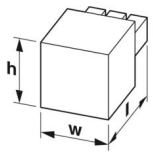
Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	hot-dip tin-plated
Metal surface terminal point (top layer)	Tin (4 - 8 µm Sn)
Metal surface contact area (top layer)	Tin (4 - 8 µm Sn)

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]	21.82 mm
Height [h]	12.3 mm
Length [l]	21.7 mm

Mounting

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.	7 N
Withdraw strength per pos. approx.	5 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
Test directions	X-, Y- and Z-axis

Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R_1	1.6 mΩ
Contact resistance R_2	1.7 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

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

Electrical 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 MΩ

Air clearances and creepage distances |

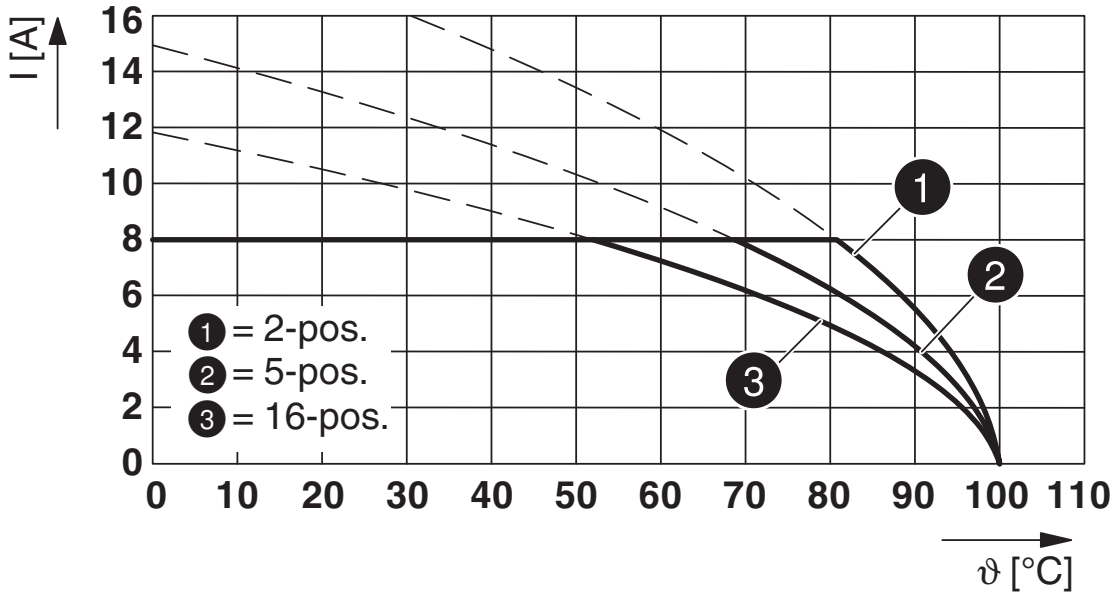
Specification	IEC 60664-1:2007-04
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm
minimum creepage distance (III/3)	2 mm
Rated insulation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

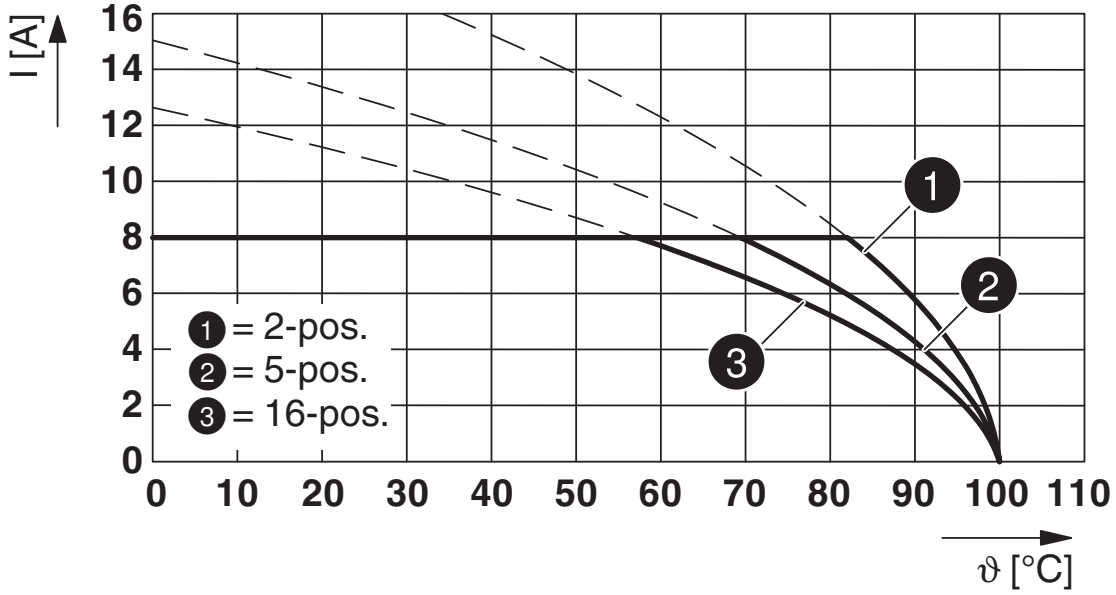
Drawings

Diagram



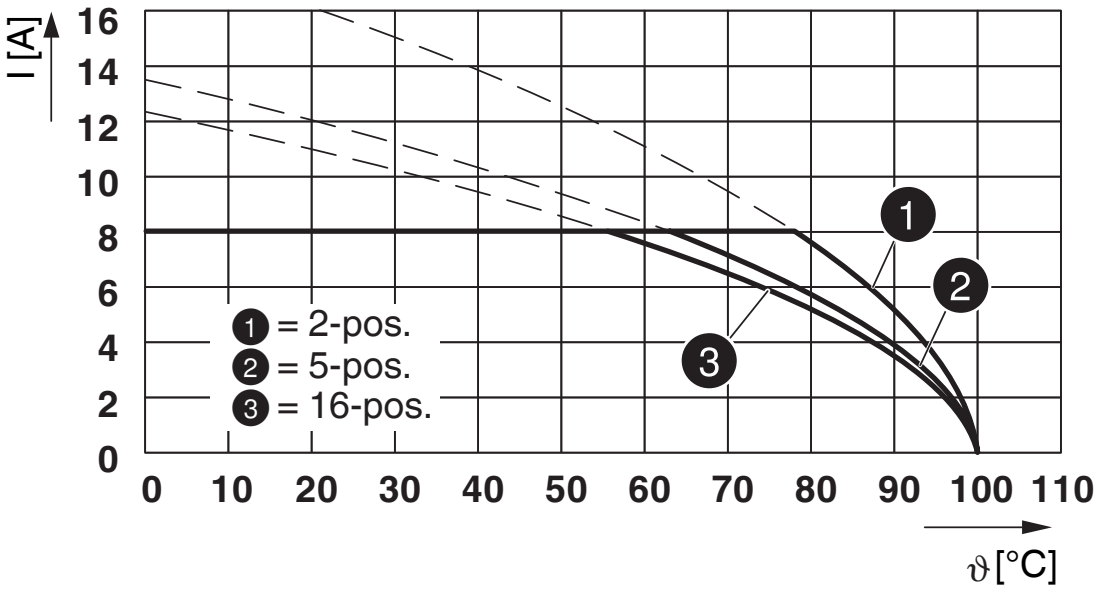
Type: FRONT-MC 1,5/...-STF-3,81 with MCD 1,5/...-G1F-3,81

Diagram



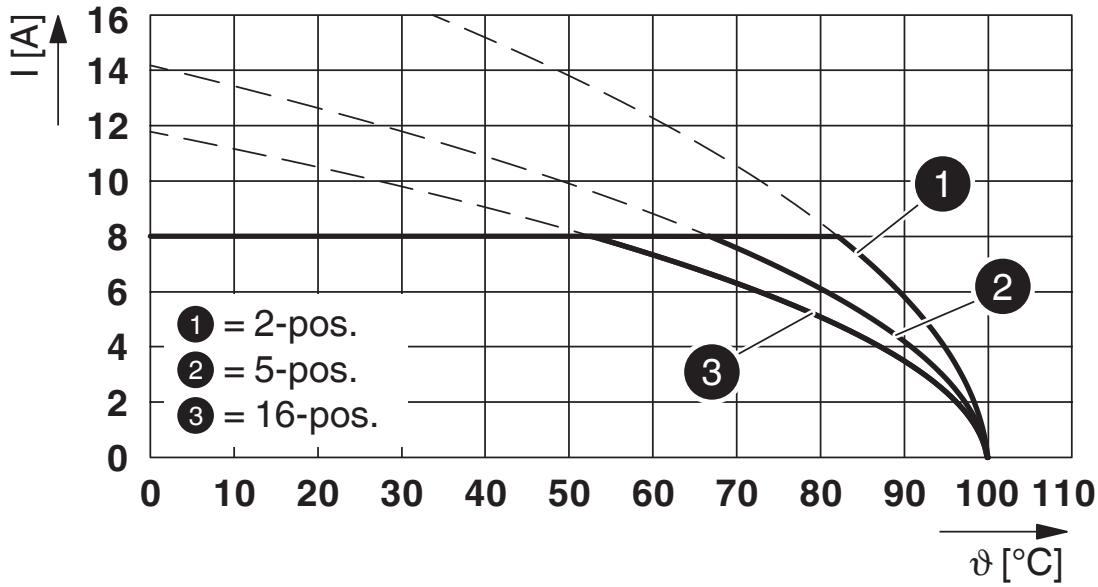
Type: FRONT-MC 1,5/...-STF-3,81 with MCDV 1,5/...-G1F-3,81

Diagram



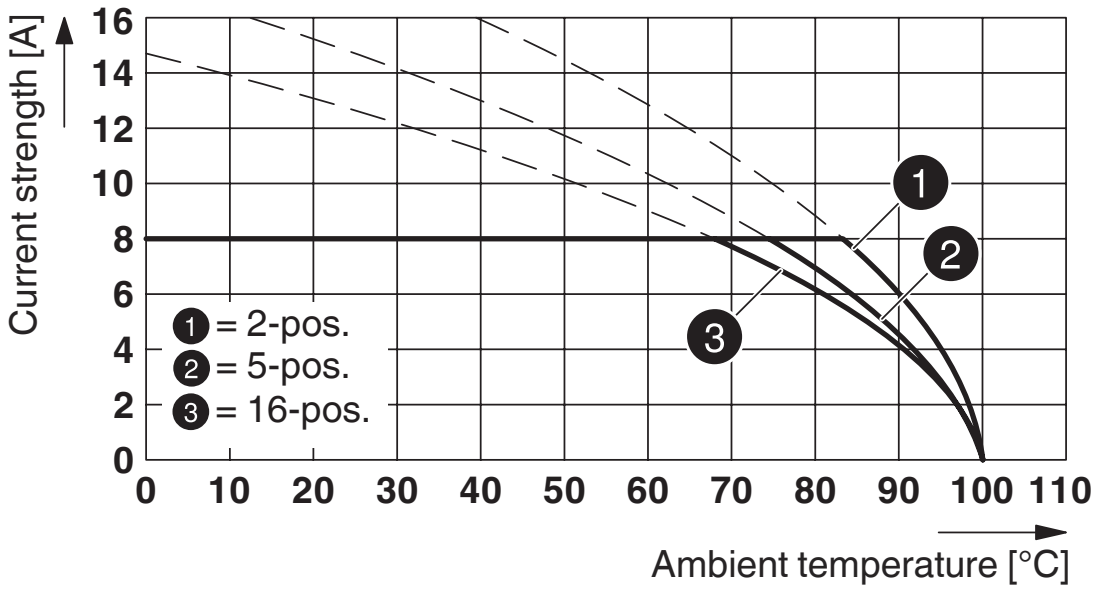
Type: FRONT-MC 1,5/...-STF-3,81 with MCVU 1,5/...-GFD-3,81

Diagram



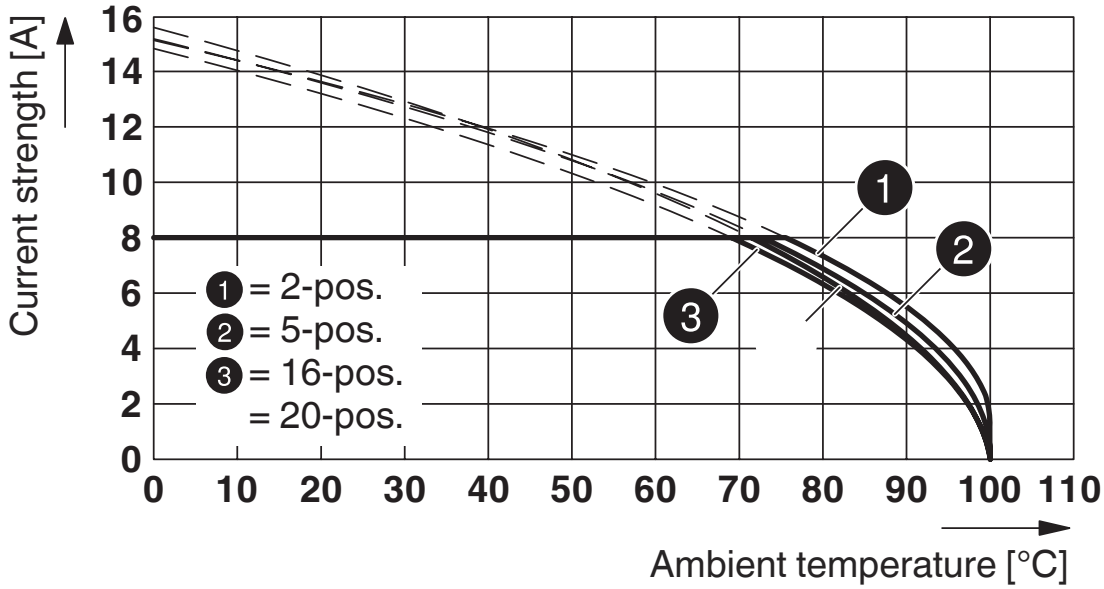
Type: FRONT-MC 1,5/...-ST-3,81 with MCD 1,5/...-GF-3,81

Diagram



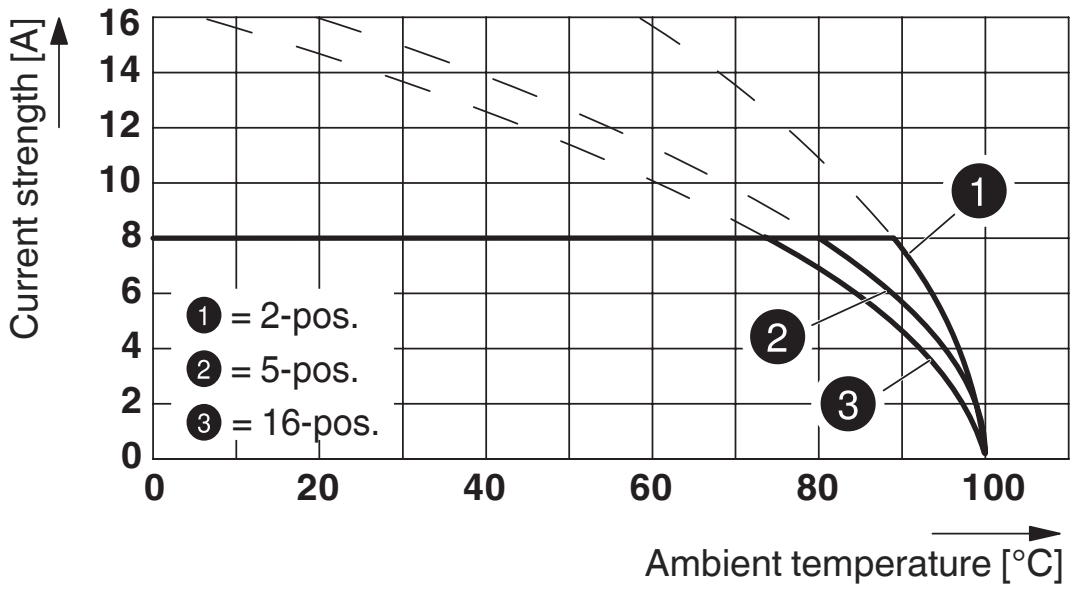
Type: FRONT-MC 1,5/...-STF-3,81 with IMC 1,5/...-STGF-3,81

Diagram



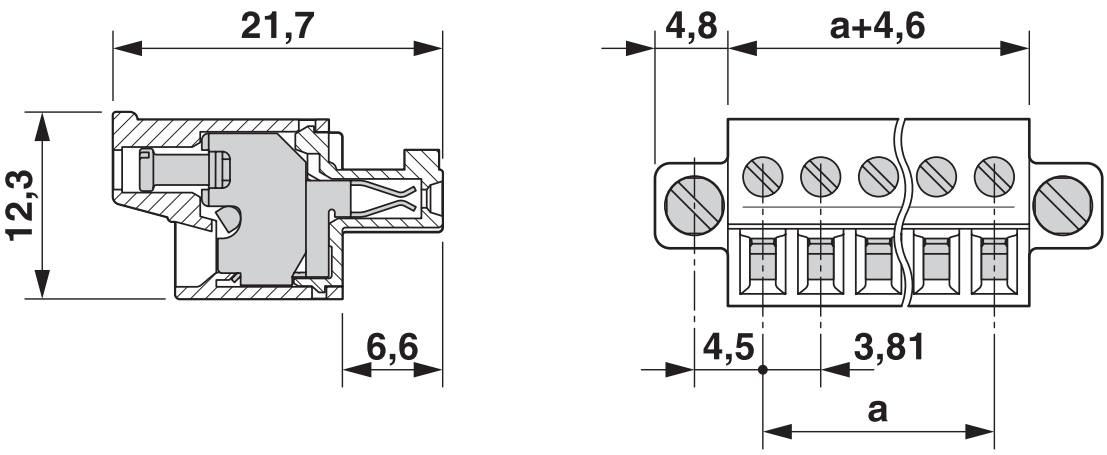
Type: FRONT-MC 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81 P... THR

Diagram

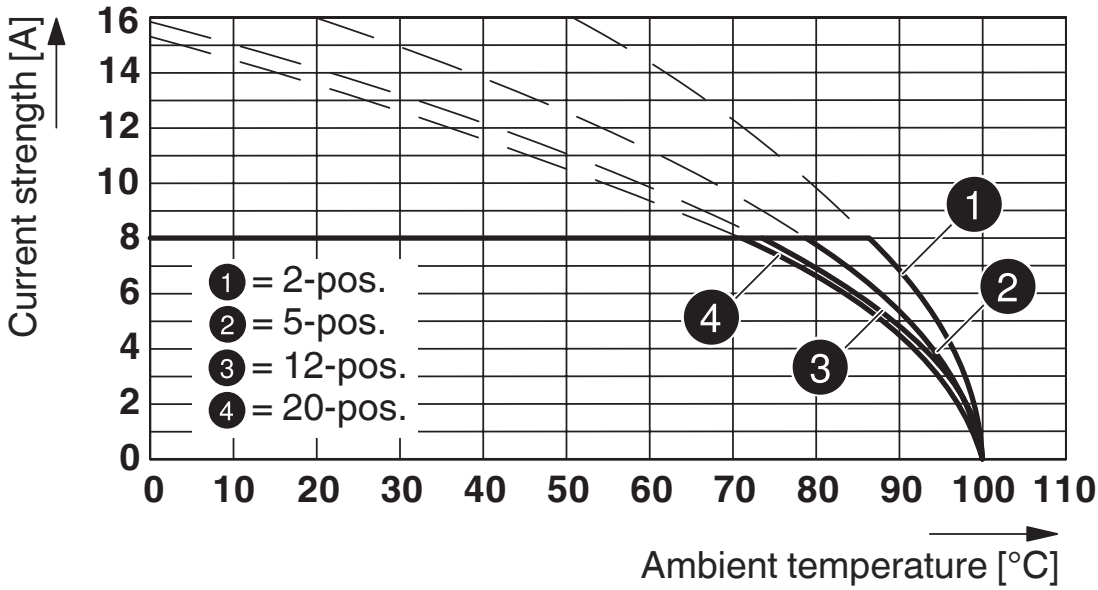


Type: FRONT-MC 1,5/...-STF-3,81 with SMC 1,5/...-GF-3,81

Dimensional drawing

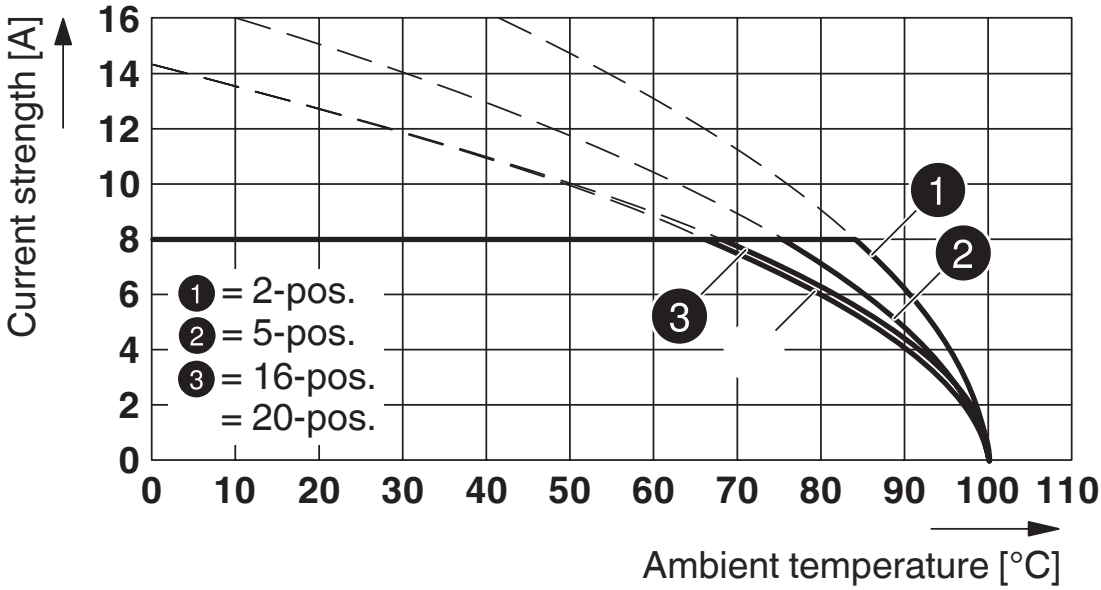


Diagram



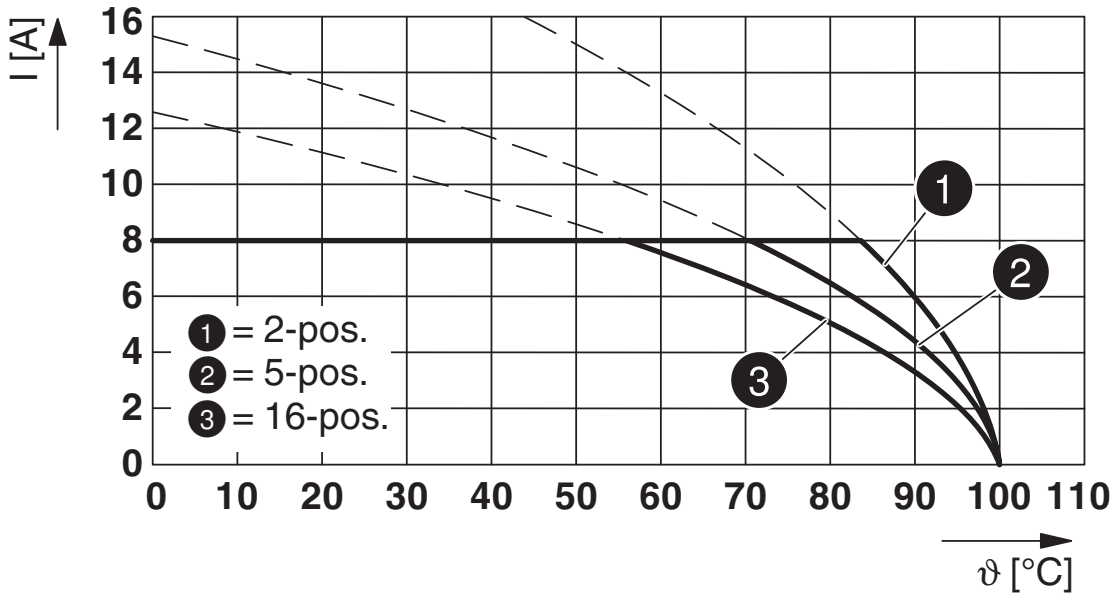
Type: FRONT-MC 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81

Diagram



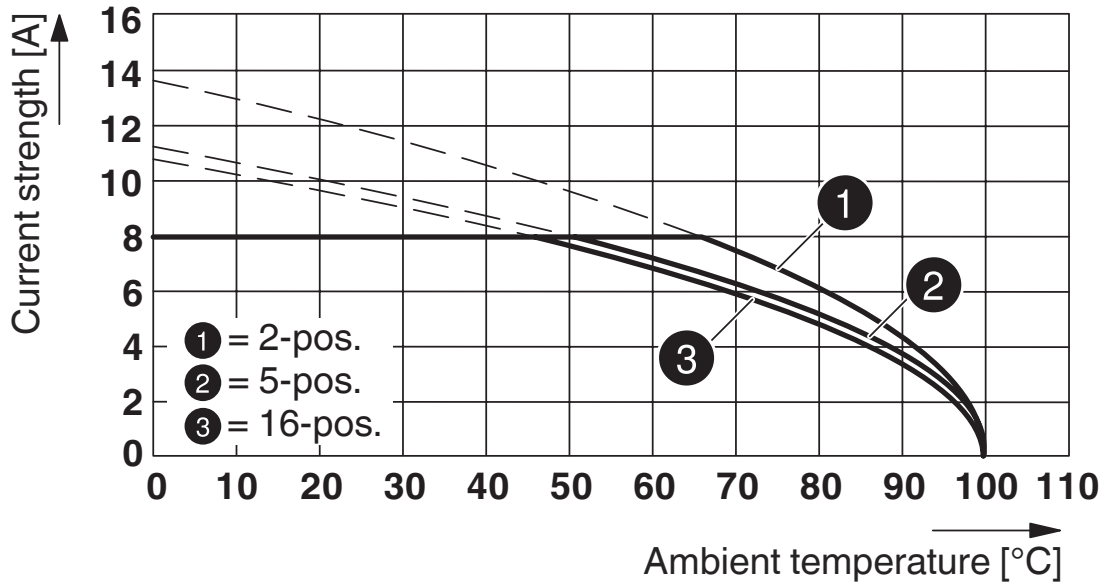
Type: FRONT-MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81 P...THR

Diagram



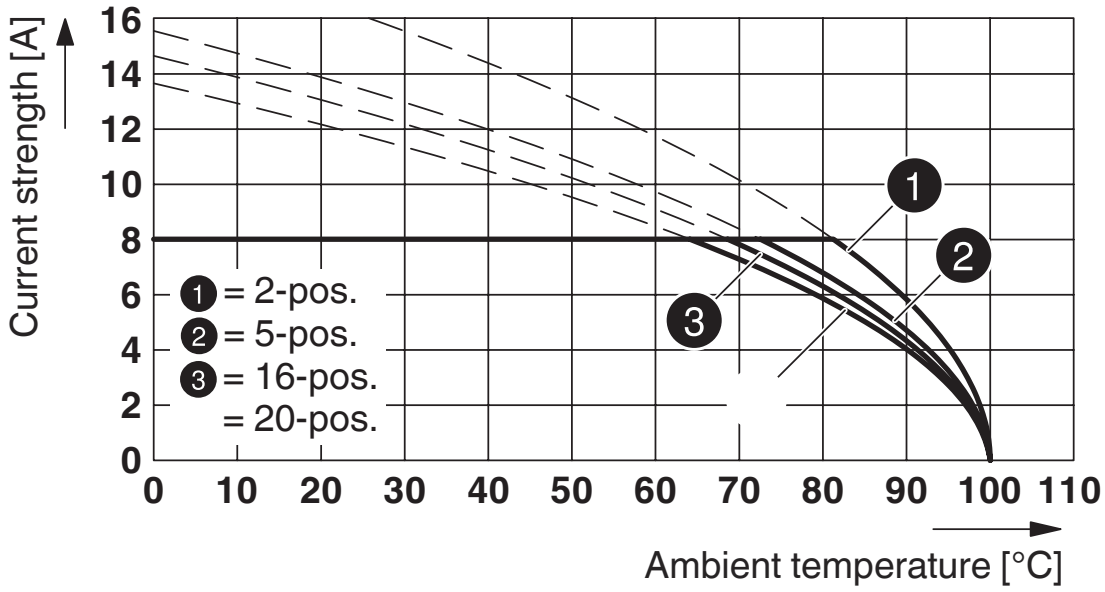
Type: FRONT-MC 1,5/...-STF-3,81 with MCDV 1,5/...-G1F-3,81

Diagram



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

Diagram



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

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/1850864

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 - 16	-
Use group D				
	300 V	8 A	30 - 16	-

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%

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