

PCB connector - FK-MCP 1,5/ 4-ST-3,81BKBDWHVSO - 1009582

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PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm², number of positions: 4, pitch: 3.81 mm, connection method: Push-in spring connection, color: black, 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 055626 481784
GTIN	4055626481784

Technical data

Item properties

Brief article description	PCB 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	4
Connection method	Push-in spring connection
Number of levels	1
Number of connections	4

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Technical data

Item properties

Number of potentials	4
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Electrical parameters

Nominal current	8 A
Nom. voltage	160 V
Rated voltage	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	Push-in spring connection
pluggable	Yes
Conductor cross section solid	0.14 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG / kcmil	26 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 0.75 mm ²
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 ² ; Length: 7 mm
	Cross section: 0.34 mm ² ; Length: 7 mm
	Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 0.75 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 1 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 1.5 mm ² ; Length: 10 mm
Recommended crimping pliers	1212034 CRIMPFOX 6
Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.14 mm ² ; Length: 8 mm
	Cross section: 0.25 mm ² ; Length: 8 mm
	Cross section: 0.34 mm ² ; Length: 8 mm
	Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 0.75 mm ² ; Length: 10 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

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Material data - contact

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	black (9005)
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
CTI according to IEC 60112	600
Flammability rating according to UL 94	HB

Dimensions for the product

Length [l]	21 mm
Width [w]	16.03 mm
Height [h]	12.4 mm
Pitch	3.81 mm
Height (without solder pin)	12.4 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 ... 100 °C (dependent on the derating curve)

Termination and connection method

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 ² / solid / > 10 N

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Pull-out test

	0.14 mm ² / flexible / > 10 N
	1.5 mm ² / solid / > 40 N
	1.5 mm ² / 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.	9 N
Withdraw strength per pos. approx.	7 N
Polarization and coding	IEC 60512-13-5:2006-02
Contact holder in insert	IEC 60512-15-1:2008-05
Test force per pos.	31 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
Minimum creepage distance value (II/2)	1.6 mm

Current carrying capacity / derating curves

Caption	Type: FK-MCP 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81
Specification	IEC 61984:2008-10
Reduction factor	0.8
Note	Representation based on IEC 60512-5-2:2002-02
	For number of positions, see diagram

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
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Durability tests (B)

Contact resistance R ₁	1.6 mΩ
Insertion/withdrawal cycles	25
Contact resistance R ₂	1.6 mΩ
Impulse withstand voltage at sea level	2.95 kV
Power-frequency withstand voltage	1.39 kV
Insulation resistance, neighboring positions	> 53 GΩ

Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	20
Conductor cross section	1.5 mm ²
Test current	8 A
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

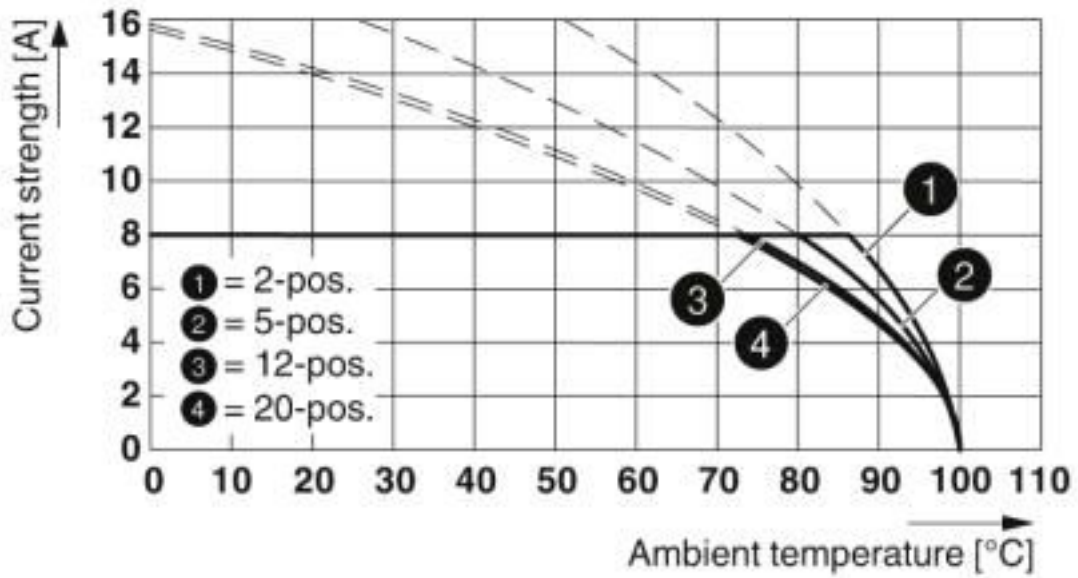
Environmental Product Compliance

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

Drawings

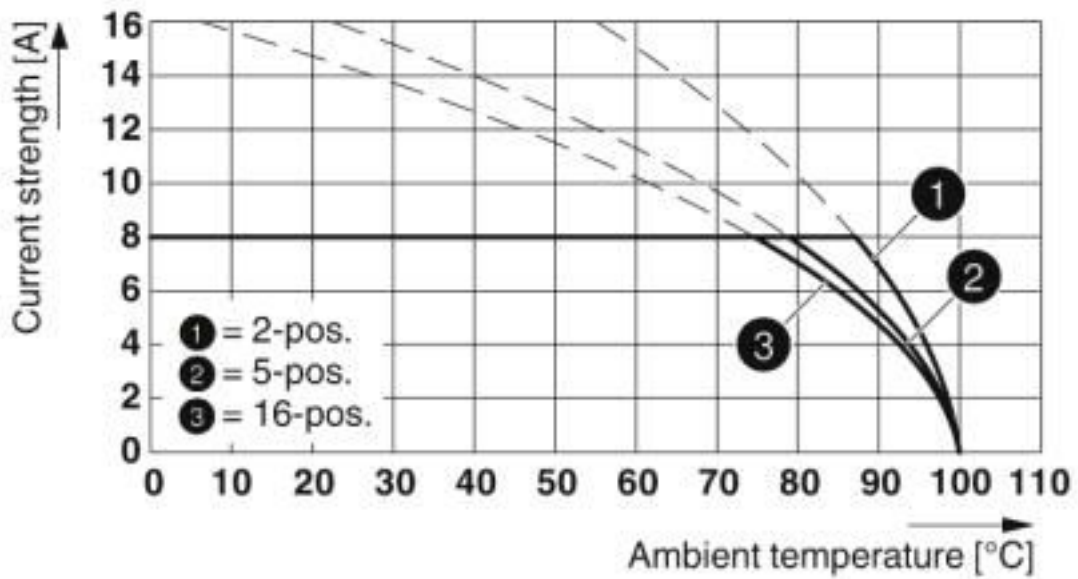
PCB connector - FK-MCP 1,5/ 4-ST-3,81BKBDWHVSO - 1009582

Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCV 1,5/...-G-3,81

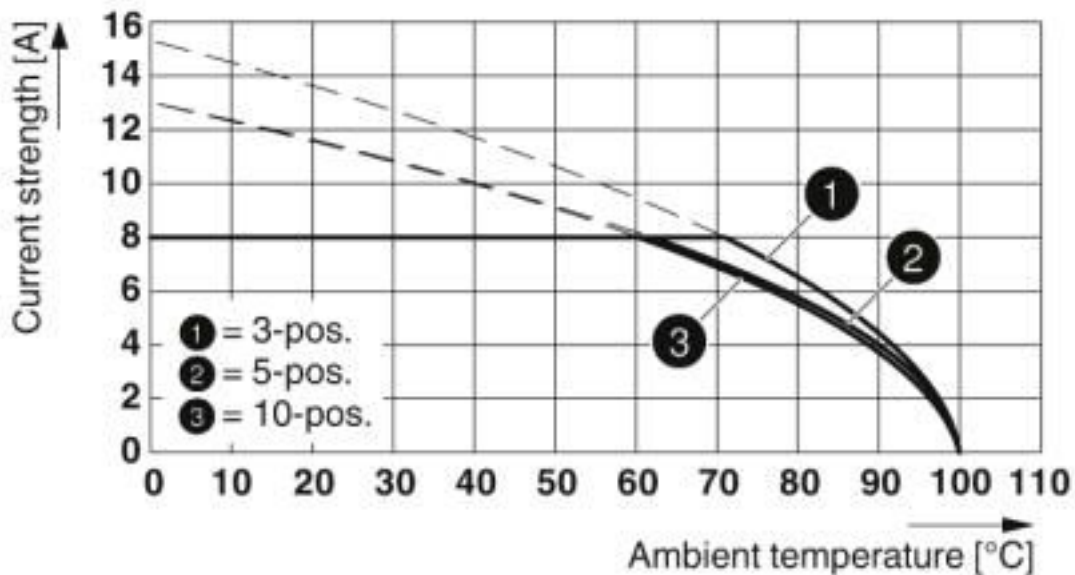
Diagram



Type: FK-MCP 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81

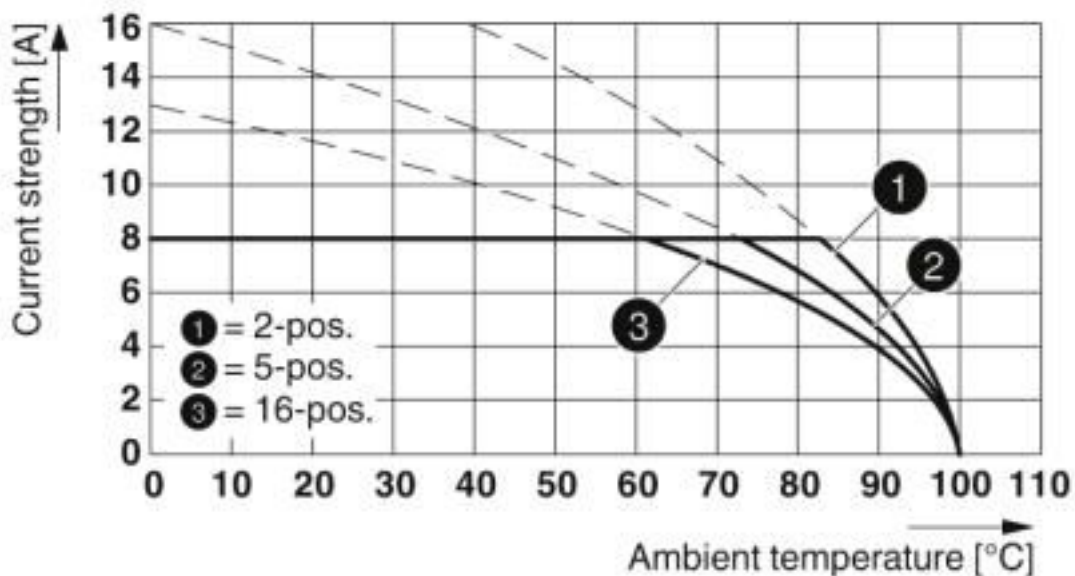
PCB connector - FK-MCP 1,5/ 4-ST-3,81BKBDWHVSO - 1009582

Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81

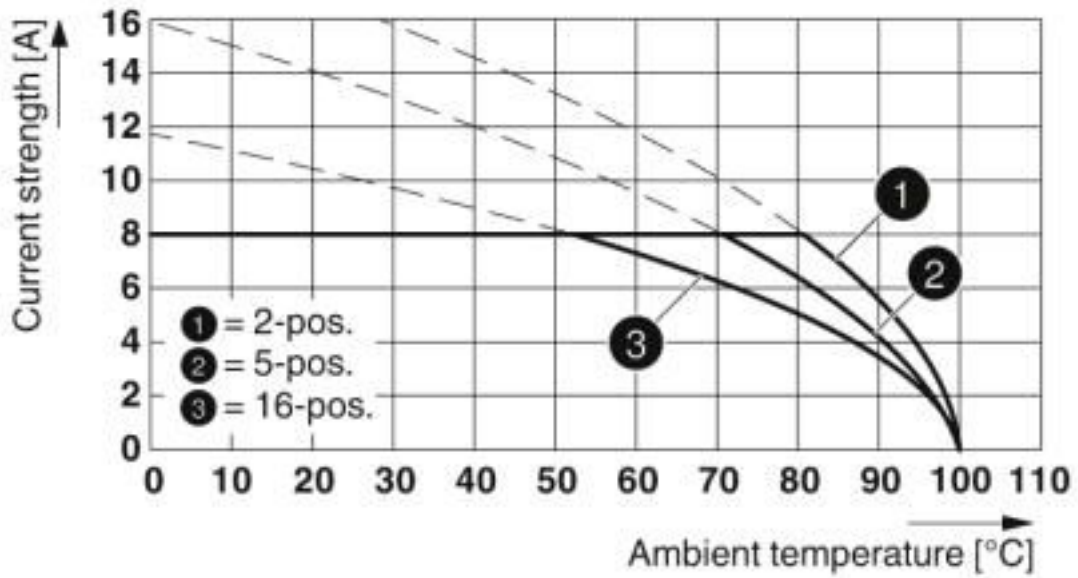
Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCD 1,5/...-G-3,81

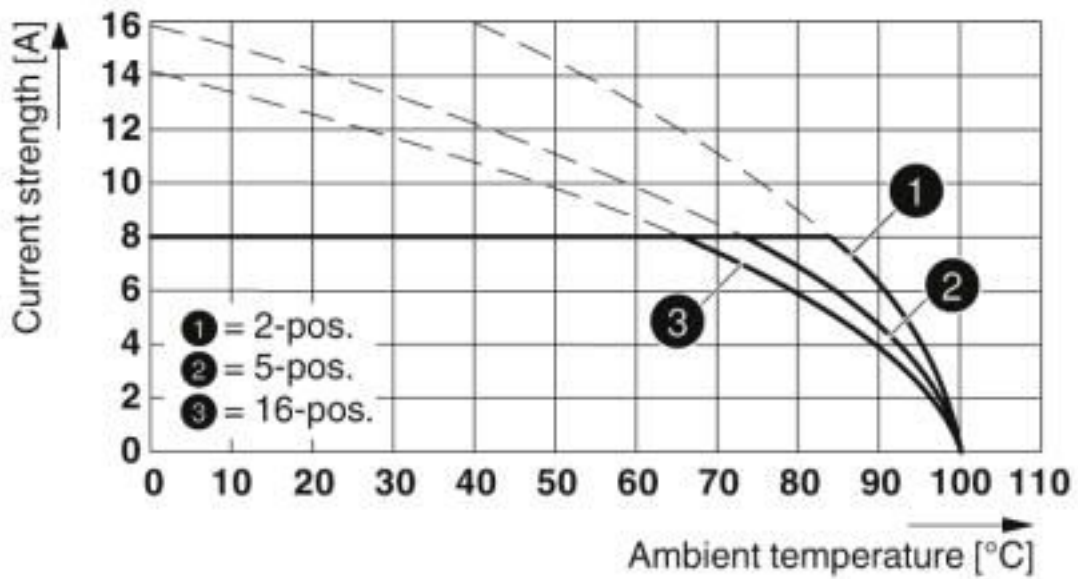
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Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81

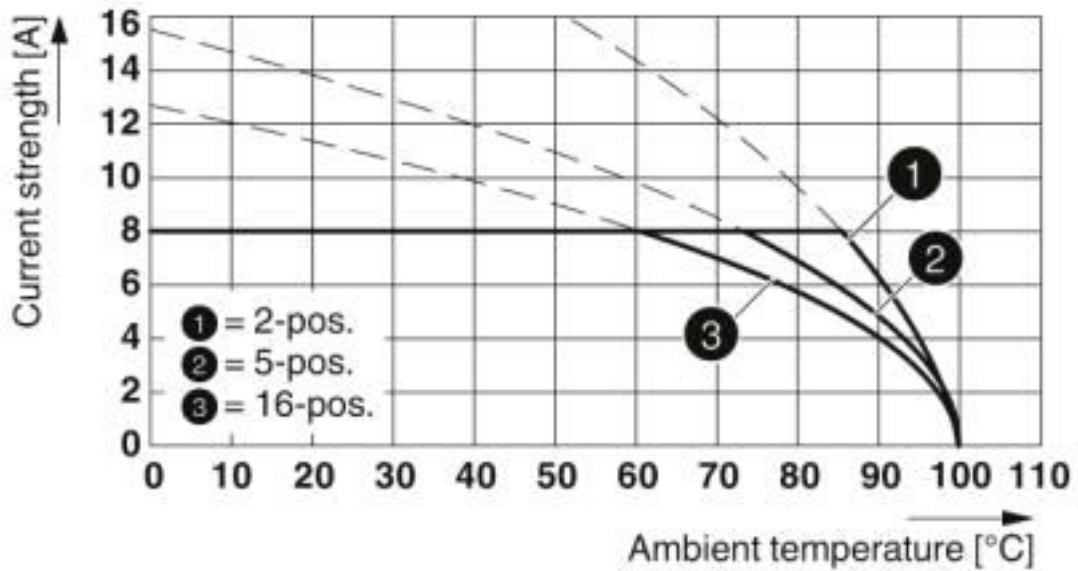
Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCDV 1,5/...-G-3,81

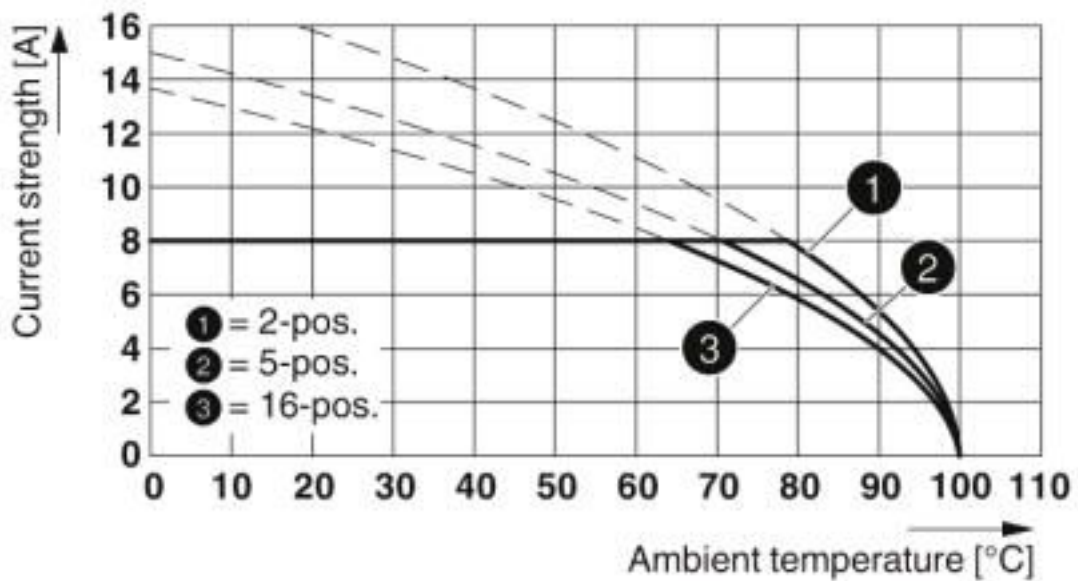
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Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81

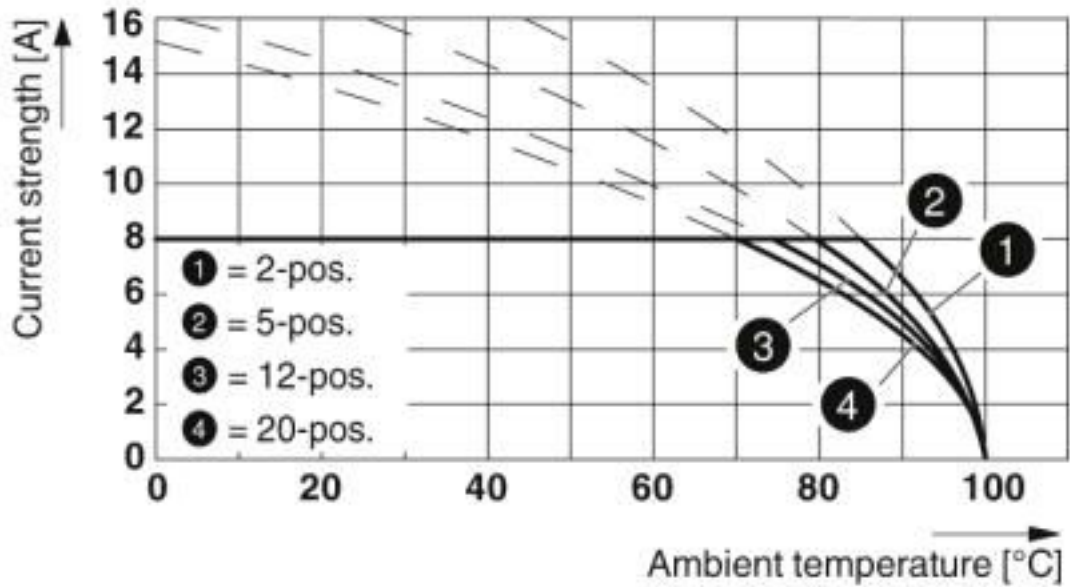
Diagram



Type: FK-MCP 1,5/...-ST-3,81 with MCVU 1,5/...-GFD-3,81

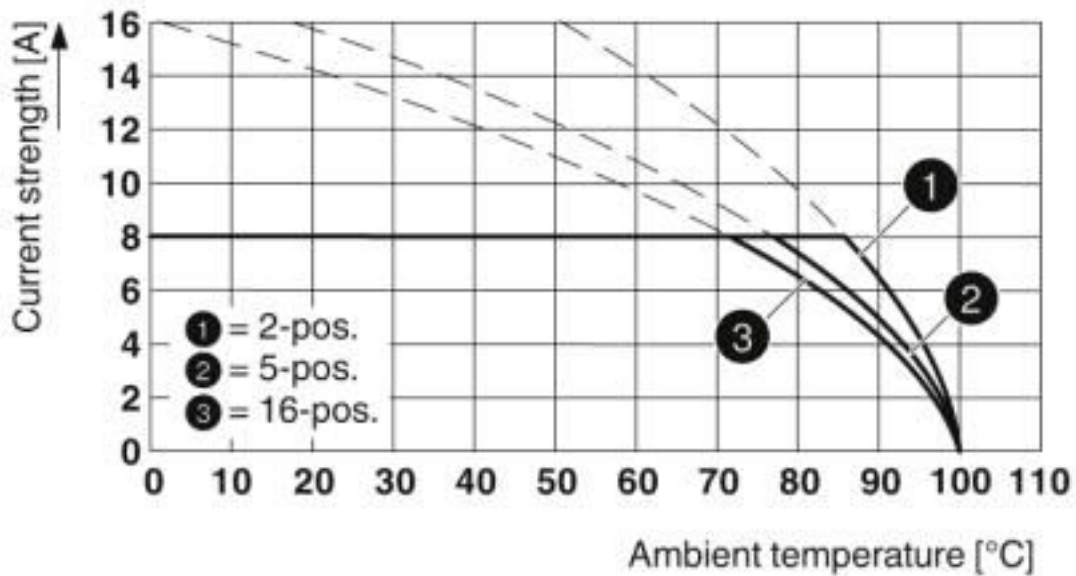
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Diagram



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

Diagram



Type: FK-MCP 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81

Classifications

eCl@ss

eCl@ss 10.0.1	27440309
eCl@ss 4.0	27260700

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Classifications

eCl@ss

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 8.0	27440309
eCl@ss 9.0	27440309

ETIM

ETIM 5.0	EC002638
ETIM 6.0	EC002638
ETIM 7.0	EC002638

Approvals


Approvals


Approvals

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

Ex Approvals


Approval details

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


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

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Approvals

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		
mm ² /AWG/kcmil	0.2-1.5		

EAC		B.01687
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cULus Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	E60425-19920306
	B		
Nominal voltage UN	300 V		
Nominal current IN	8 A		
mm ² /AWG/kcmil	28-16		

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