

MSTB 2,5/20-GF-5,08 16PA - PCB header



1768635

<https://www.phoenixcontact.com/us/products/1768635>

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PCB headers, nominal cross section: 2.5 mm², color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Pin, number of potentials: 16, number of rows: 1, number of positions: 20, number of connections: 16, product range: MSTB 2,5/...-GF, pitch: 5.08 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.23 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: Screw locking mechanism, mounting method: Threaded flange, type of packaging: packed in cardboard

Your advantages

- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Easy PCB replacement thanks to plug-in modules
- Well-known mounting principle allows worldwide use
- Plug-in direction parallel to the PCB
- Screwable flange for superior mechanical stability

Commercial data

Item number	1768635
Packing unit	50 pc
Minimum order quantity	50 pc
Product key	AACSHD
GTIN	4046356648394
Weight per piece (including packing)	9.666 g
Weight per piece (excluding packing)	8.654 g
Country of origin	DE

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Technical data

Product properties

Product type	PCB headers
Product family	MSTB 2,5/..-GF
Product line	COMBICON Connectors M
Number of positions	20
Pitch	5.08 mm
Number of connections	16
Number of rows	1
Number of potentials	16
Mounting flange	Threaded flange
Pin layout	Linear pinning
Solder pins per potential	1

Electrical properties

Properties

Nominal current I_N	12 A
Nominal voltage U_N	320 V
Contact resistance	1 mΩ
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Rated voltage (II/2)	400 V
Rated surge voltage (II/2)	4 kV

Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

Flange

Tightening torque	0.3 Nm
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Attachment on the PCB

Tightening torque	0.3 Nm
Screw	Sheet metal screw ISO 1481-ST 2,2x6,5 C or ISO 7049-ST 2,2x6,5 C

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

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Surface characteristics	Tin-plated
Metal surface contact area (top layer)	Tin (3 - 5 µm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)

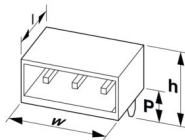
Material data - housing

Color (Housing)	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

Notes

Notes on operation	In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.
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Dimensions

Dimensional drawing	
Pitch	5.08 mm
Width [w]	111.76 mm
Height [h]	11.8 mm
Length [l]	12 mm
Installed height	8.57 mm
Solder pin length [P]	3.23 mm
Pin dimensions	1 x 1 mm

PCB design

Hole diameter	1.4 mm
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Mechanical tests

Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

Resistance of inscriptions

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Specification	IEC 60068-2-70:1995-12
Result	Test passed

Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

Contact holder in insert

Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed

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

Electrical tests

Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	16

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	IIIa
Comparative tracking index (IEC 60112)	CTI 225
Rated insulation voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
minimum clearance value - non-homogenous field (III/3)	3 mm
minimum creepage distance (III/3)	4 mm
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
minimum clearance value - non-homogenous field (III/2)	3 mm
minimum creepage distance (III/2)	3.2 mm
Rated insulation voltage (II/2)	400 V
Rated surge voltage (II/2)	4 kV
minimum clearance value - non-homogenous field (II/2)	3 mm
minimum creepage distance (II/2)	4 mm

Environmental and real-life conditions

Vibration test

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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	4.8 kV
Contact resistance R ₁	1 mΩ
Contact resistance R ₂	1 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	105 °C/168 h
Power-frequency withstand voltage	2.21 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

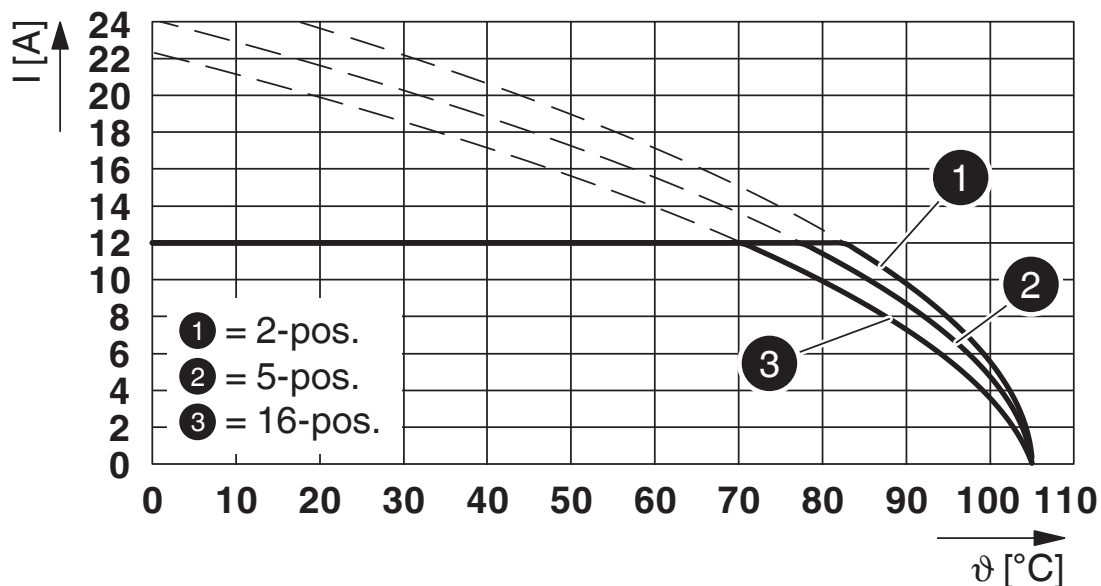
Ambient temperature (operation)	-40 °C ... 105 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

Packaging specifications

Type of packaging	packed in cardboard
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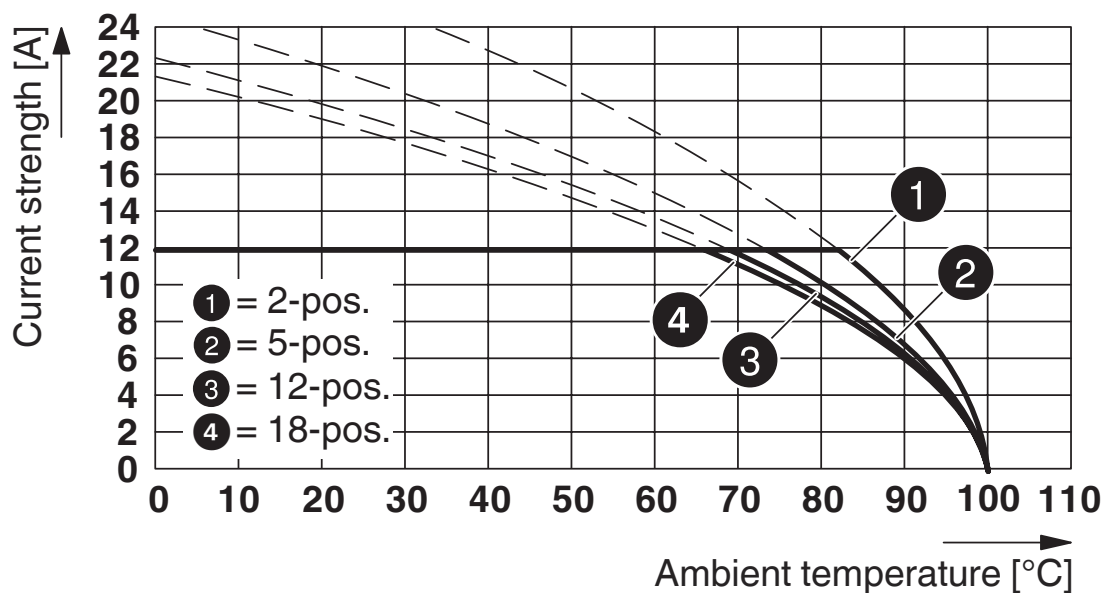
Drawings

Diagram

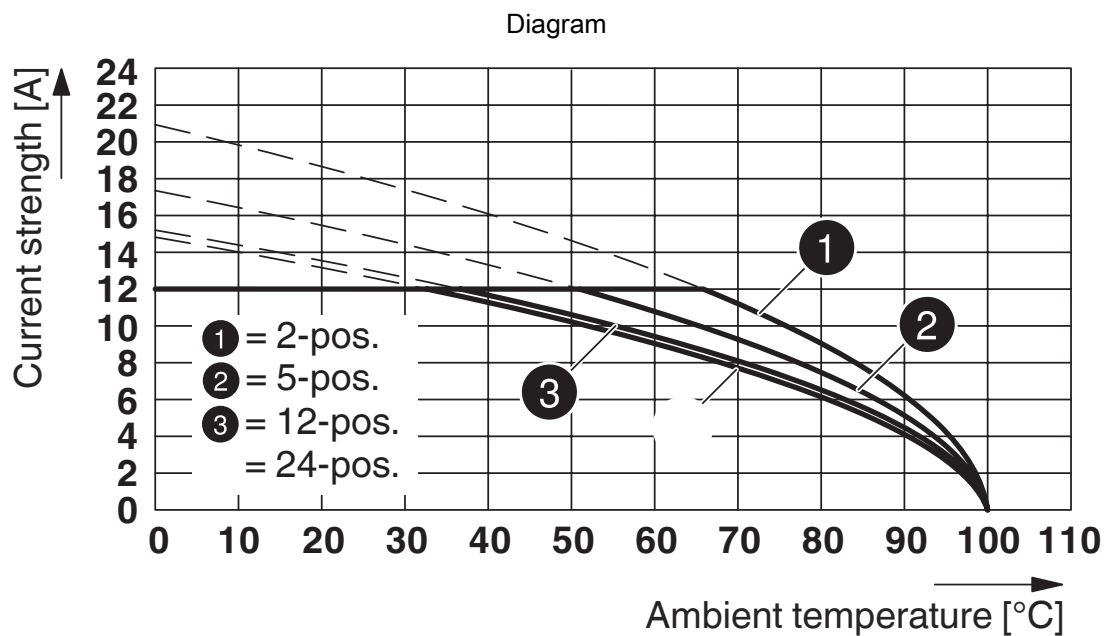


Type: FKCS 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

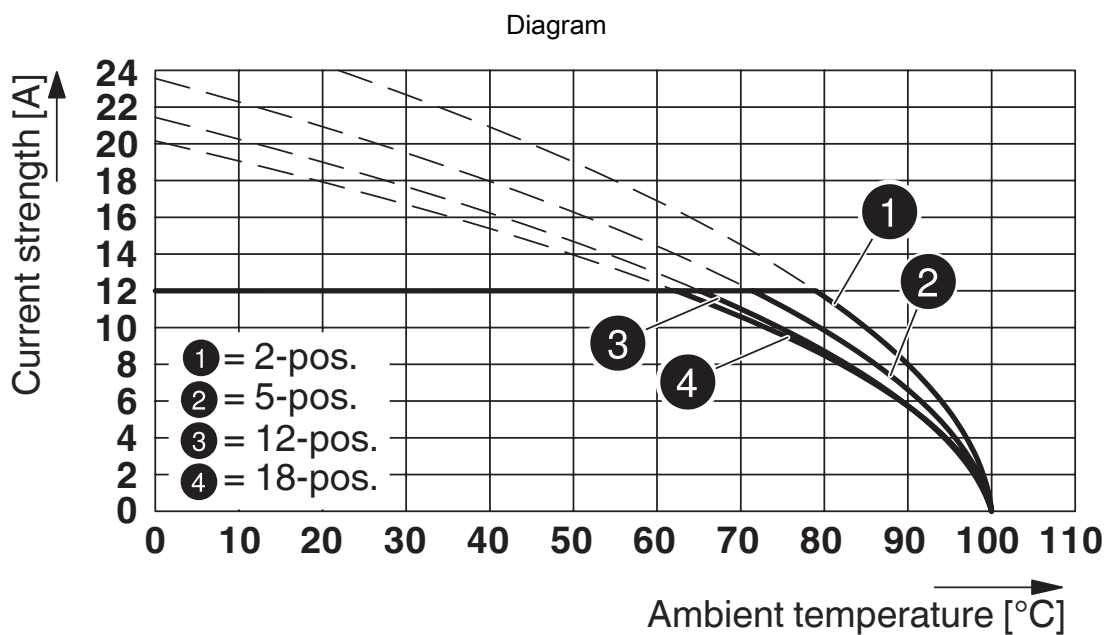
Diagram



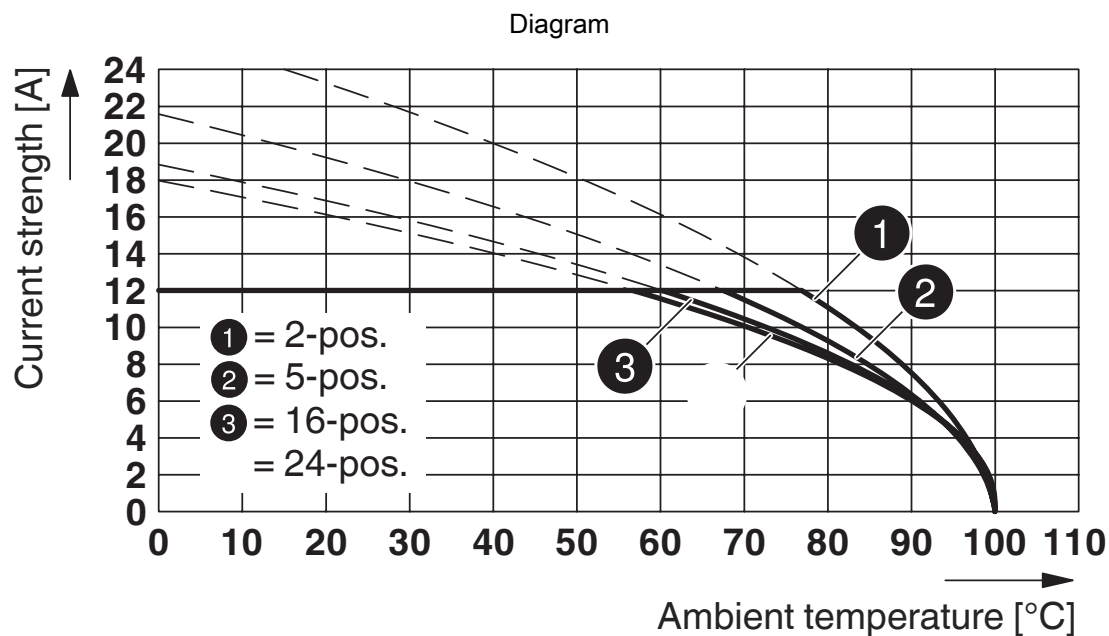
Type: FKCT 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



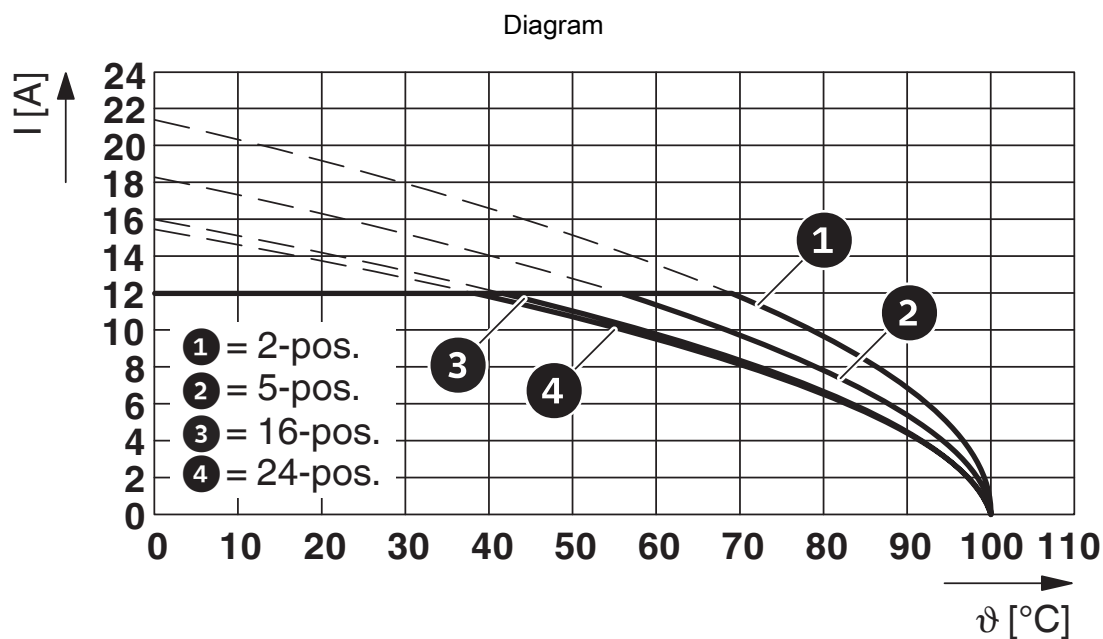
Type: MVSTBR 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



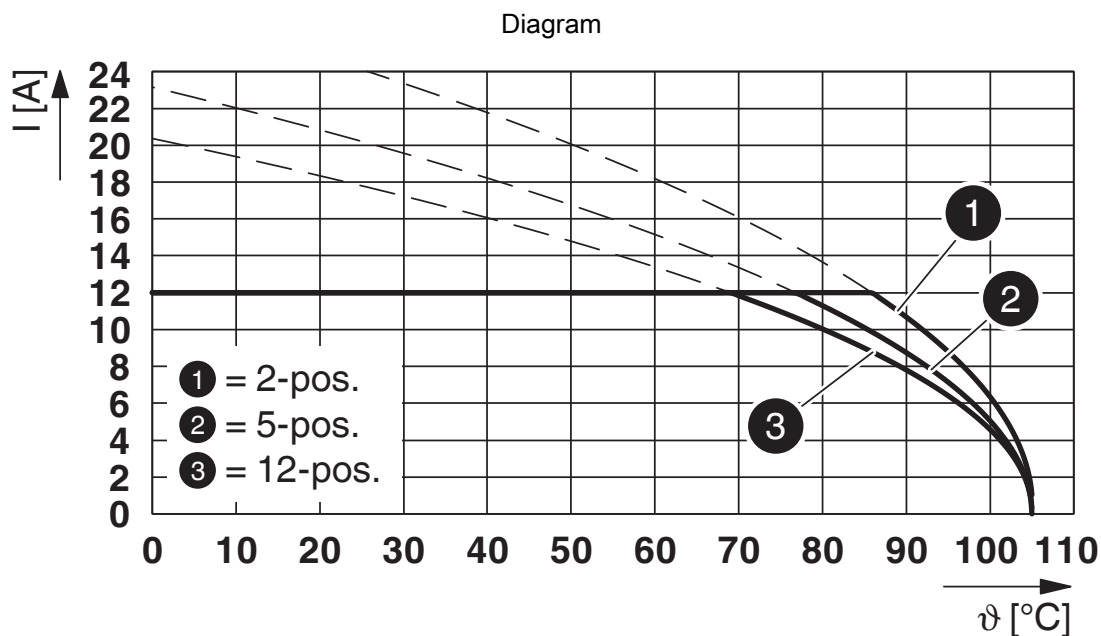
Type: MSTBT 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



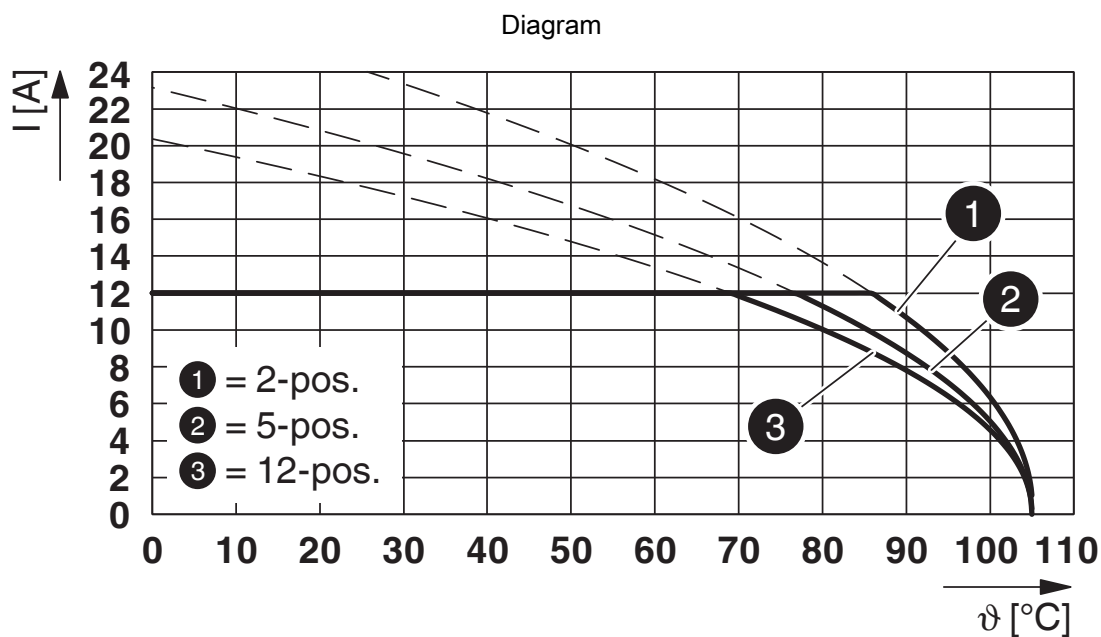
Type: FRONT-MSTB 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



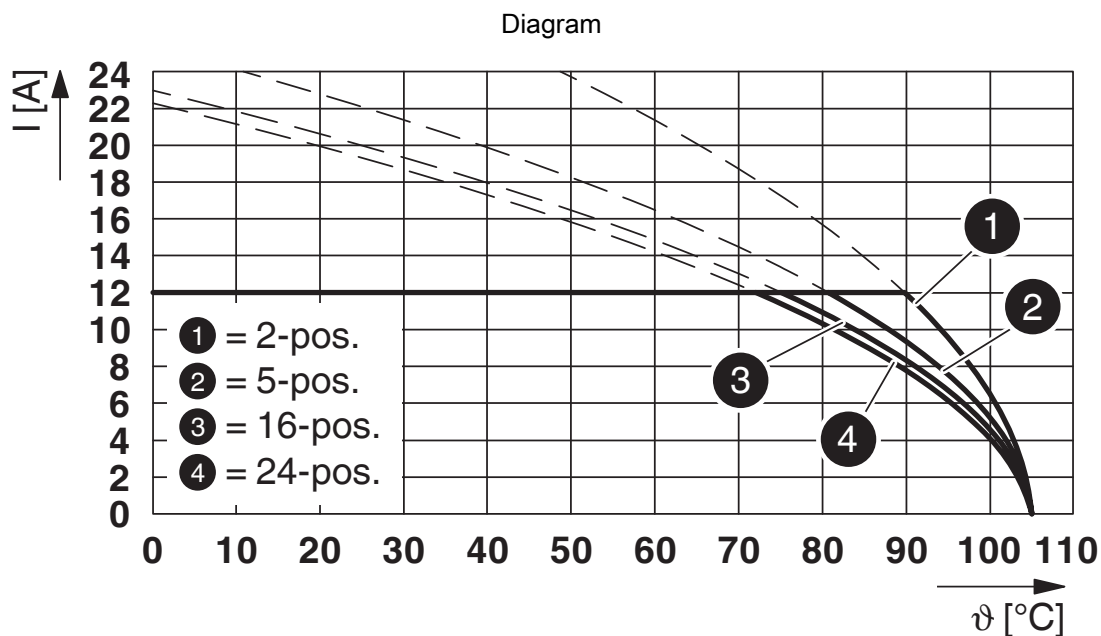
Type: SMSTB 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



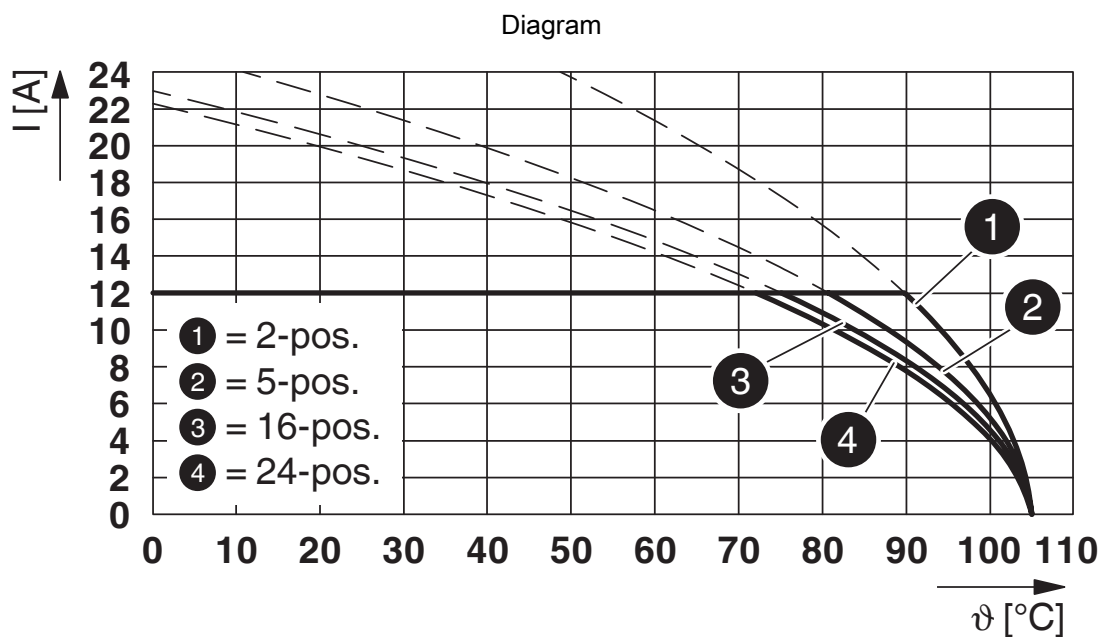
Type: FKCVR 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



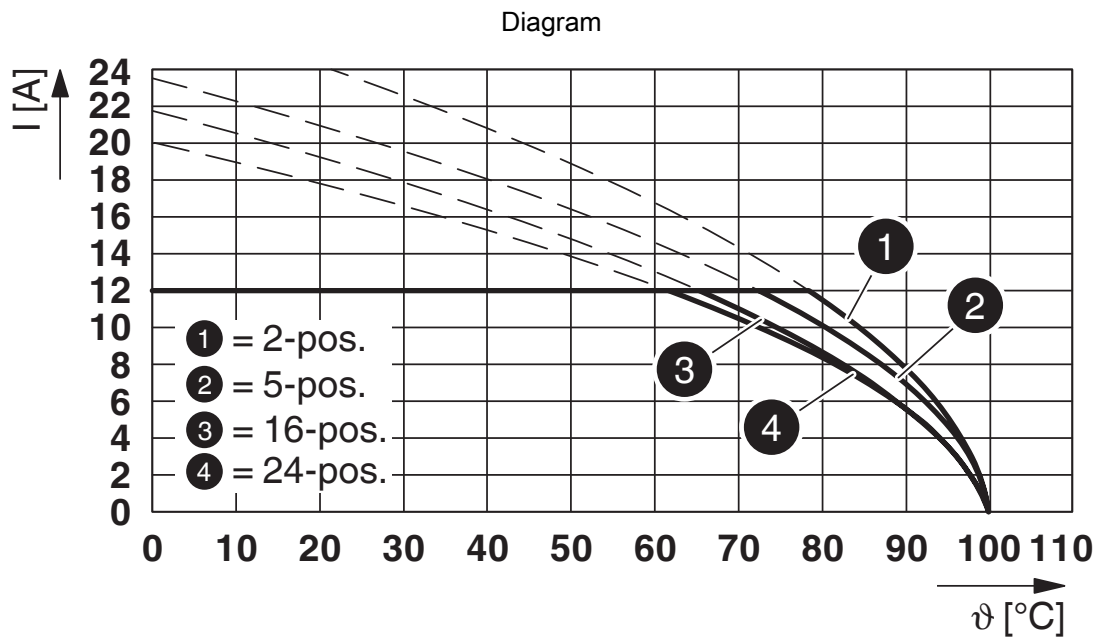
Type: FKCVW 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



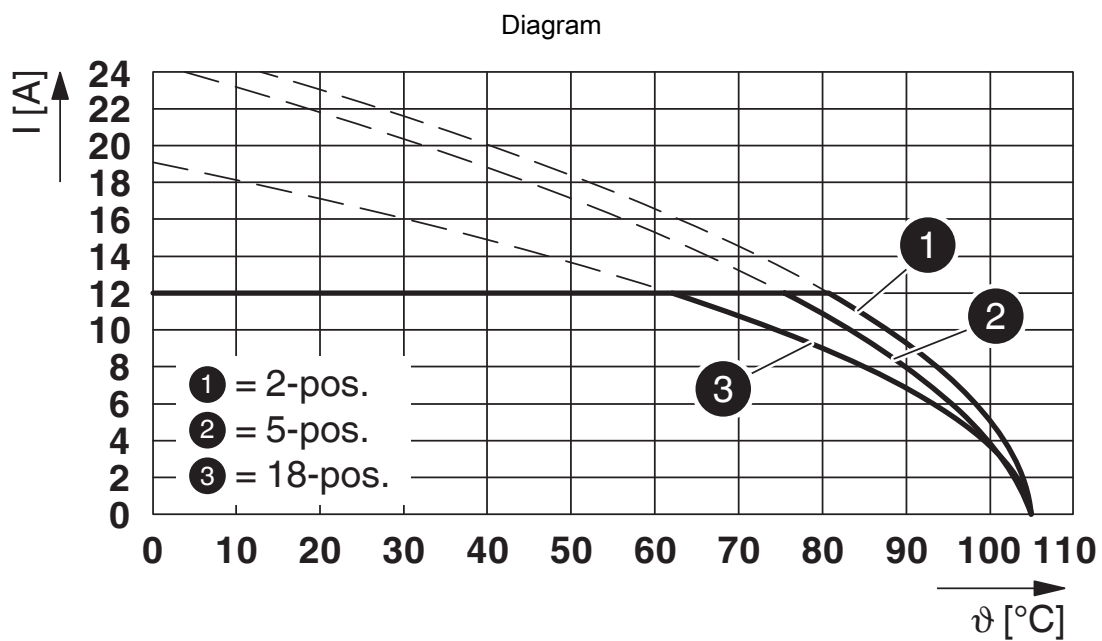
Type: FKCO(R/W) 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



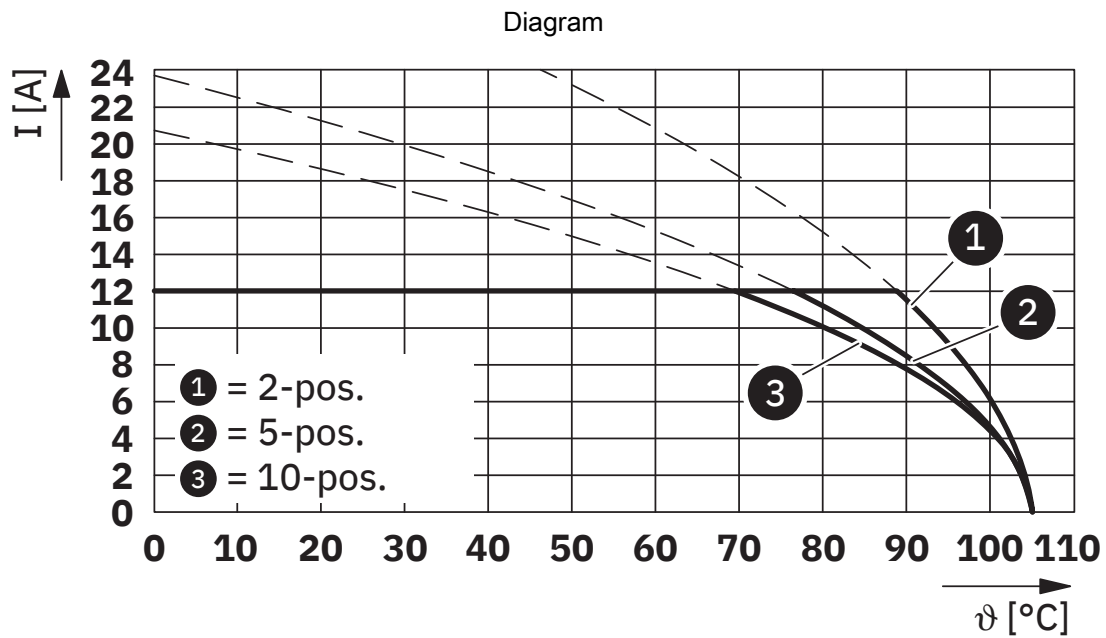
Type: FKCO(R/W) 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: FKCN 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: FKCN 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: TFKC 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1768635>

 CSA Approval ID: 13631-2585951				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
Use group B				
	300 V	10 A	-	-
Use group D				
	300 V	10 A	-	-

 cULus Recognized Approval ID: E60425-19931011				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
Use group B				
	300 V	15 A	-	-
Use group D				
	300 V	10 A	-	-

 VDE approval of drawings Approval ID: 40050648				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	250 V	12 A	-	-

 DNV GL Approval ID: TAE00001EY				
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Classifications

ECLASS

ECLASS-13.0	27460201
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ETIM

ETIM 9.0	EC002637
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UNSPSC

UNSPSC 21.0	39121400
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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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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