

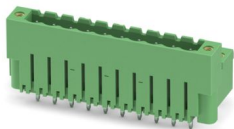
# MDSTBV 2,5/10-GF - PCB header



1846166

<https://www.phoenixcontact.com/us/products/1846166>

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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Pin, number of potentials: 20, number of rows: 2, number of positions: 10, number of connections: 20, product range: MDSTBV 2,5/-GF, pitch: 5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 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, When combined with MVSTB or FKCV connector components, one MVSTBW (or FKCVW) connector and one MVSTBR (or FKCVR) connector must be used. Combination with TMSTBP connector components is not possible!

## 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
- Conductor connection on several levels enables higher contact density
- Screwable flange for superior mechanical stability

## Commercial data

Item number	1846166
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AA03
Product key	AACSCE
GTIN	4017918184520
Weight per piece (including packing)	19.794 g
Weight per piece (excluding packing)	17.913 g
Customs tariff number	85366930
Country of origin	GR

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## Technical data

### Product properties

Product type	PCB headers
Product family	MDSTBV 2,5/..-GF
Product line	COMBICON Connectors M
Type	Header can be aligned
Number of positions	10
Pitch	5 mm
Number of connections	20
Number of rows	2
Number of potentials	20
Mounting type	Threaded flange
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	10 A
Nominal voltage $U_N$	320 V
Contact resistance	2.5 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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### 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	Tin-plated
Metal surface contact area (top layer)	Tin (5 μm - 7 μm Sn)
Metal surface contact area (middle layer)	Nickel (2 μm - 3 μm Ni)

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Metal surface soldering area (top layer)	Tin (5 µm - 7 µm Sn)
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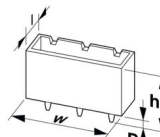
## Material data - housing

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 mm
Width [w]	62.5 mm
Height [h]	26 mm
Length [l]	23.7 mm
Installed height	22.1 mm
Solder pin length [P]	3.9 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

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

### Polarization and coding

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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

Specification	IEC 60512-13-2:2006-02
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	12

### 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

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV

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Contact resistance R <sub>1</sub>	2.5 mΩ
Contact resistance R <sub>2</sub>	2.6 mΩ
Contact resistance R <sub>2</sub> 2nd level	1.5 mΩ
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 MΩ

## 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	2.21 kV

## 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

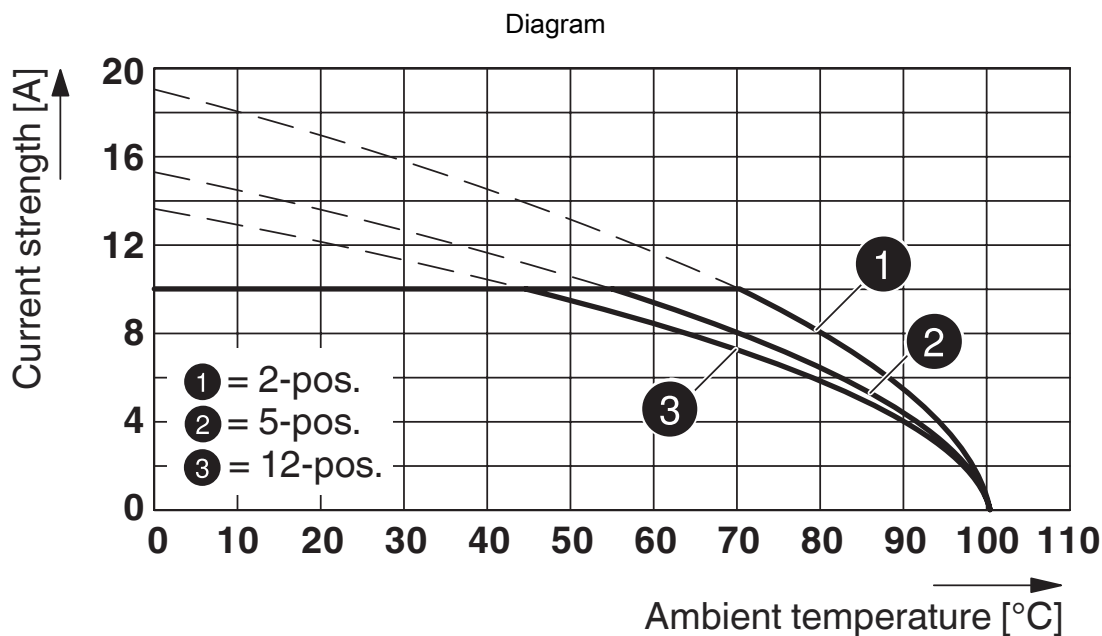
## Ambient conditions

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)

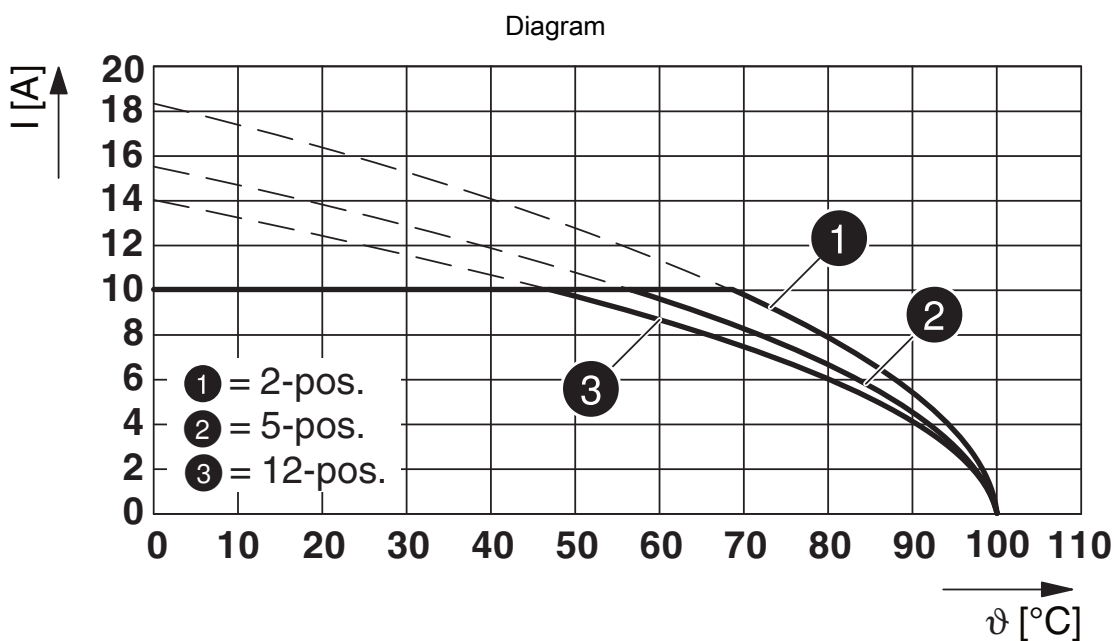
## Packaging specifications

Type of packaging	packed in cardboard
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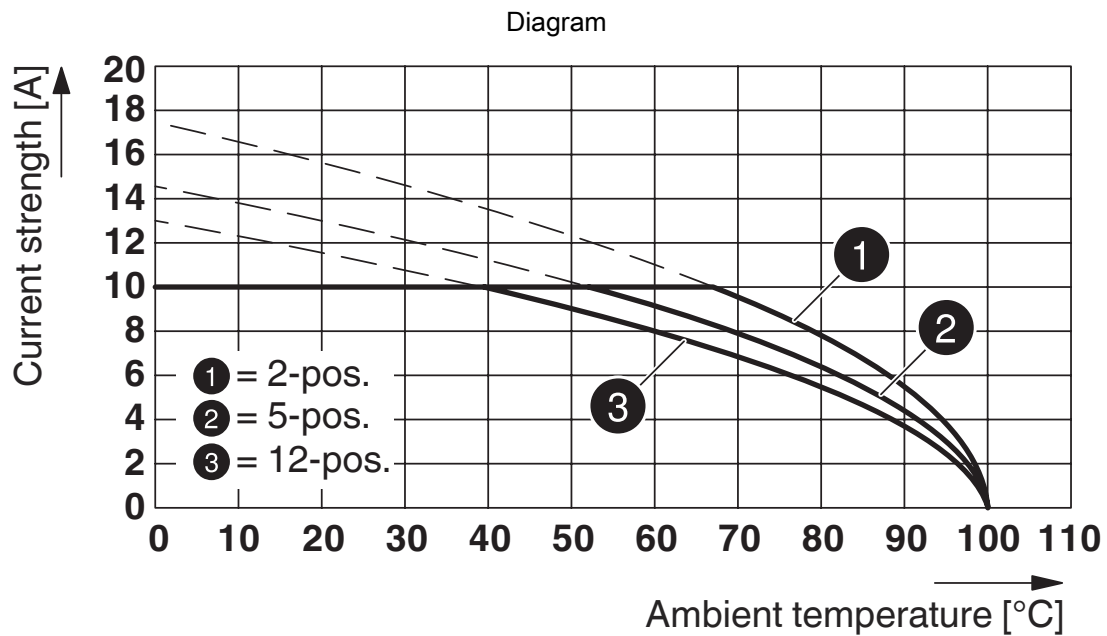
## Drawings



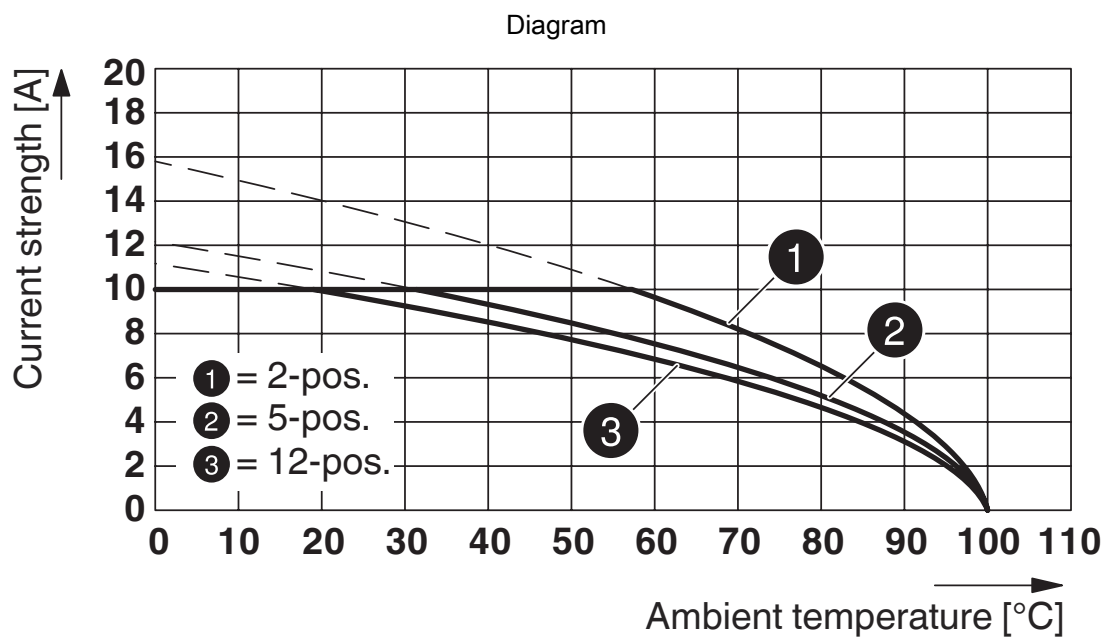
Type: MSTB 2,5/...-STF with MDSTBV 2,5/...-GF



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



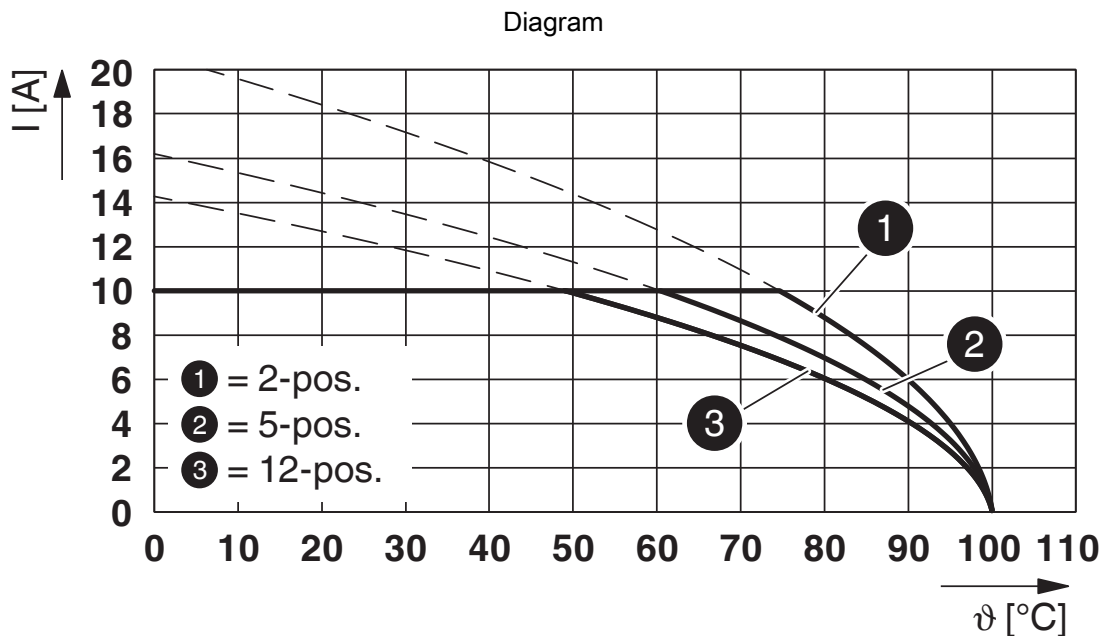
Type: FRONT-MSTB 2,5/...-STF-5,08 with MDSTBV 2,5/...-GF



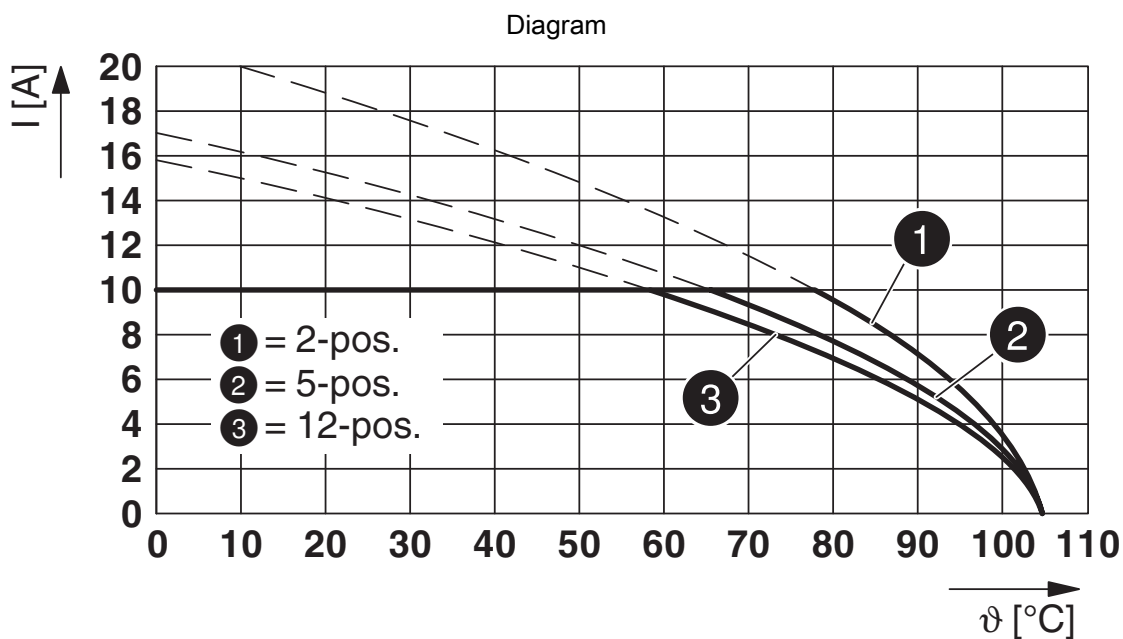
Type: MVSTB(R/W) 2,5/...-STF with MDSTBV 2,5/...-GF

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



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

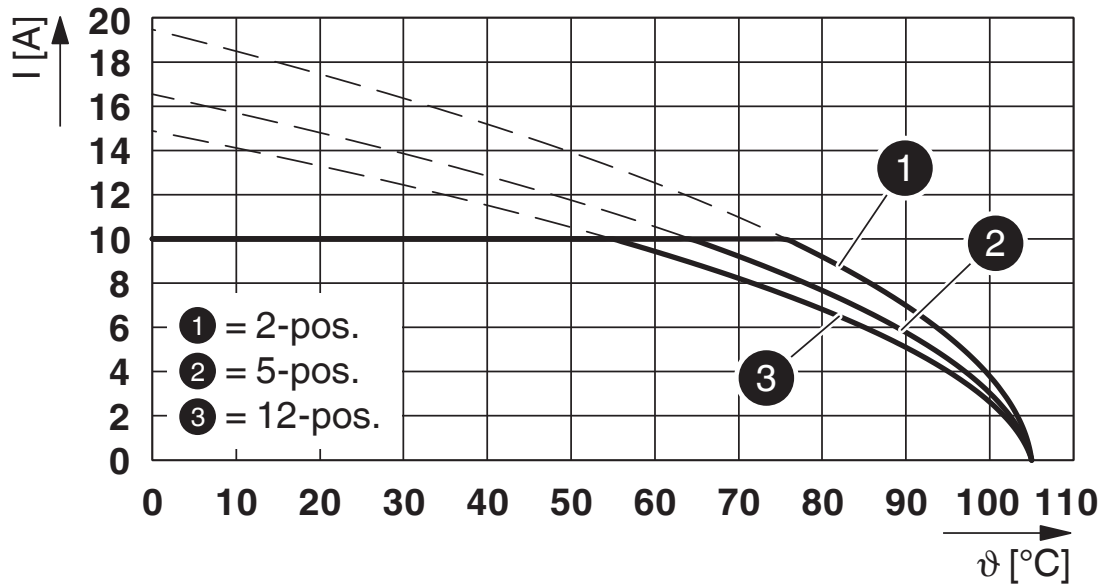
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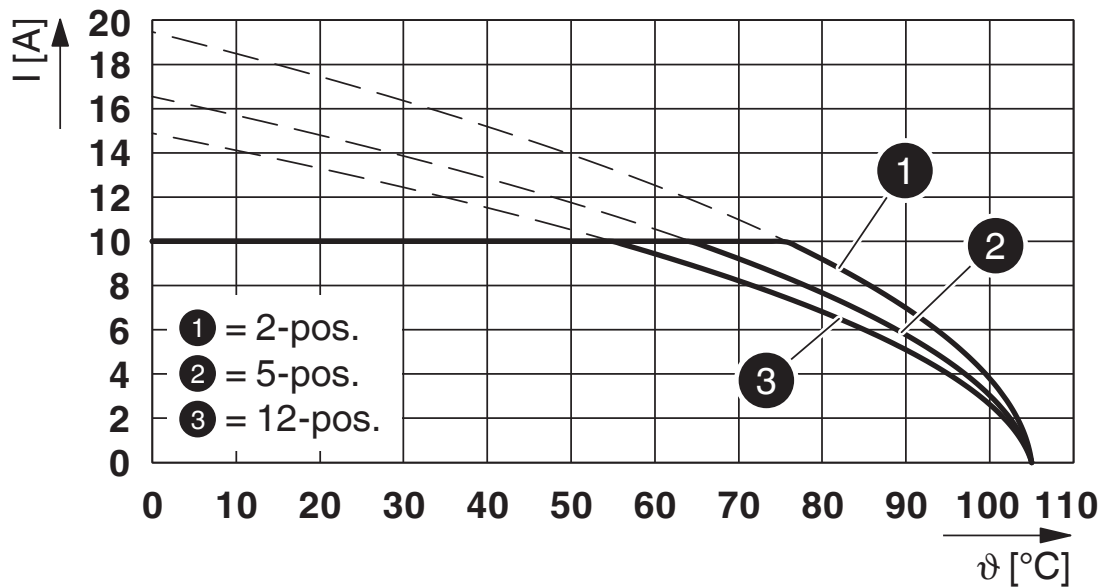
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Diagram



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

Diagram



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

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1846166>

 <b>cULus Recognized</b> Approval ID: E60425-19931011				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B	300 V	12 A	-	-
D	150 V	12 A	-	-

 <b>VDE approval of drawings</b> Approval ID: 40050648				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine	250 V	10 A	-	-

 <b>CSA</b> Approval ID: 2585950				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B	300 V	12 A	-	-
D	300 V	12 A	-	-

 <b>DNV GL</b> Approval ID: TAE00001EY				
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## Classifications

### ECLASS

ECLASS-13.0	27460201
ECLASS-15.0	27460201

### ETIM

ETIM 10.0	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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