

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 4 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: FK-MC 0,5/.-ST, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON FK-MC 0,5, locking: without, mounting: without, type of packaging: packed in cardboard

## 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

## Commercial data

Item number	1768004
Packing unit	50 pc
Minimum order quantity	1 pc
Product key	AAAFCA
GTIN	4046356438513
Weight per piece (including packing)	2.716 g
Weight per piece (excluding packing)	2.6 g
Customs tariff number	85366990
Country of origin	DE

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## Technical data

### Product properties

Product line	COMBICON Connectors XS
Product type	PCB connector
Product family	FK-MC 0,5/...-ST
Number of positions	4
Pitch	2.5 mm
Number of connections	4
Number of rows	1
Mounting flange	without
Number of potentials	4

### Electrical properties

Nominal current $I_N$	4 A
Nominal voltage $U_N$	160 V
Degree of pollution	3
Contact resistance	2 m $\Omega$
Rated voltage (III/3)	100 V
Rated surge voltage (III/3)	1.5 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 FK-MC 0,5
Nominal cross section	0.5 mm <sup>2</sup>
Contact connection type	Socket

#### Interlock

Locking type	without
Mounting flange	without

#### Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross section rigid	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section AWG	26 ... 20
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

Cylindrical gauge a x b / diameter	- / 1.4 mm
Stripping length	8 mm

## Specifications for ferrules without insulating collar

recommended crimping tool	1201882 CRIMPFOX ZA 3
ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm <sup>2</sup> ; Length: 7 mm ... 8 mm
	Cross section: 0.34 mm <sup>2</sup> ; Length: 7 mm ... 8 mm
	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 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)

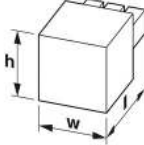
### Material data - housing

Color (Housing)	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	PBT
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

## Dimensions

Dimensional drawing	
Pitch	2.5 mm
Width [w]	10.6 mm
Height [h]	11.75 mm

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

Length [l]	19.05 mm
------------	----------

## Mounting

Connection method	Push-in spring connection
-------------------	---------------------------

## 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.
--------------------	--

## Mechanical tests

### Conductor connection

Specification	IEC 60999-1:1999-11
Result	Test passed

### Test for conductor damage and slackening

Specification	IEC 60999-1:1999-11
Result	Test passed

### Repeated connection and disconnection

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	0.2 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	0.5 mm <sup>2</sup> / solid / > 20 N
	0.5 mm <sup>2</sup> / flexible / > 20 N

### 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

### 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

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## 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)
Sweep speed	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance $R_1$	2 m $\Omega$
Contact resistance $R_2$	2.2 m $\Omega$
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 M $\Omega$

### 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	1.39 kV

### 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	12

### Insulation resistance

Specification	IEC 60512-3-1:2002-02
Insulation resistance, neighboring positions	> 5 M $\Omega$

### Temperature cycles

Specification	IEC 60999-1:1999-11
Result	Test passed

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

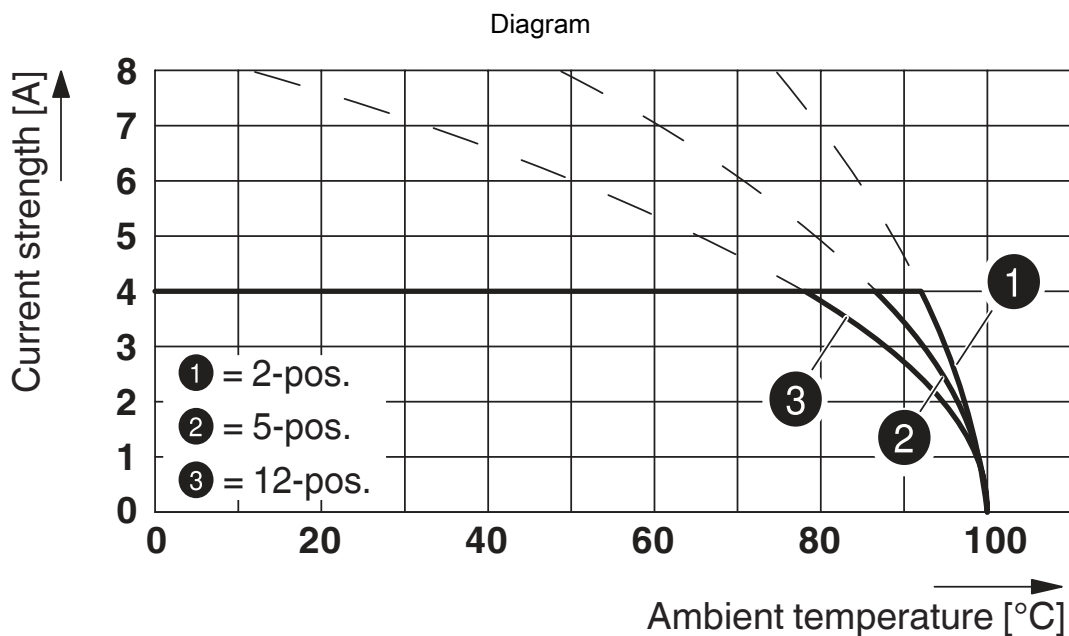
## Air clearances and creepage distances |

Specification	IEC 60664-1:1992-10 + A1:2000-02 + A2:2002-05
Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	100 V
Rated surge voltage (III/3)	1.5 kV
minimum clearance value - non-homogenous field (III/3)	0.8 mm
minimum creepage distance (III/3)	1.8 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

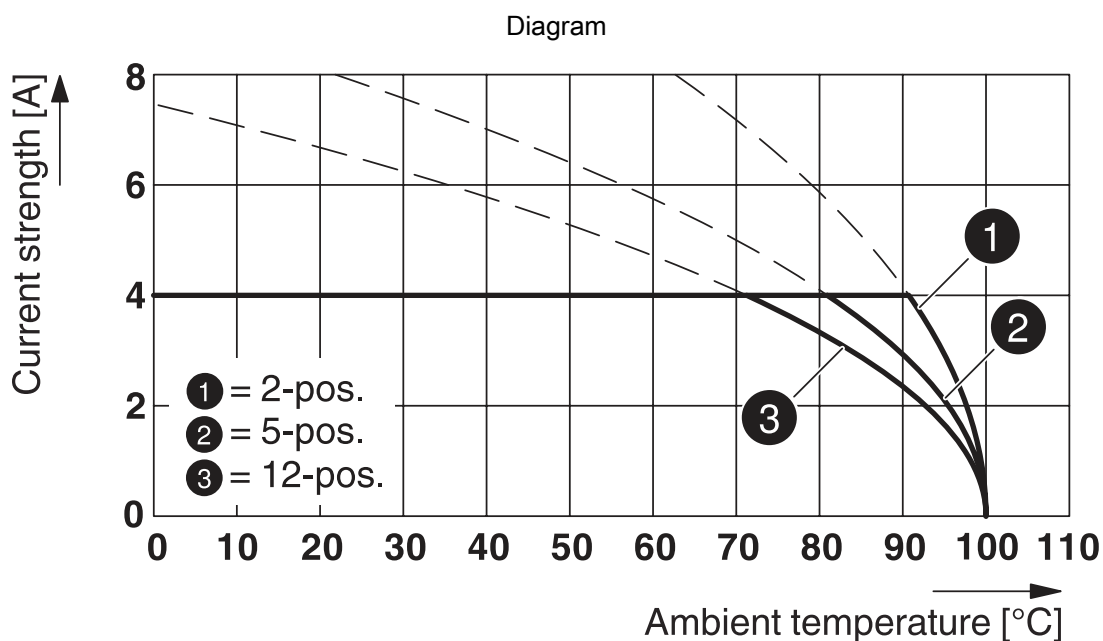
1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## Drawings



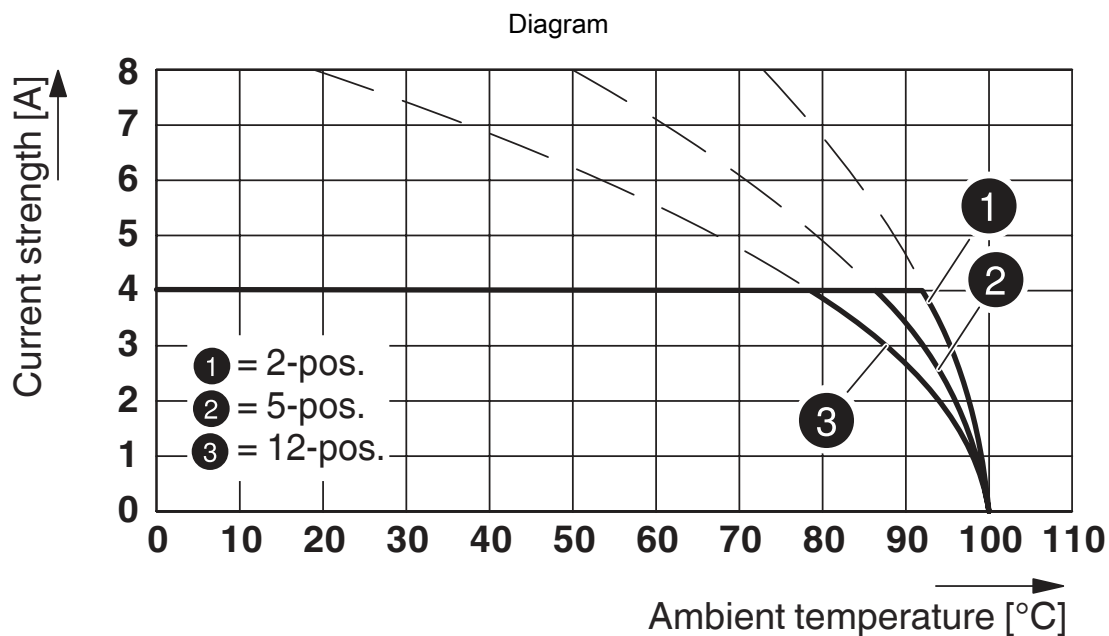
Type: FK-MC 0,5/...-ST-2,5 with MCV 0,5/...-G-2,5 THT



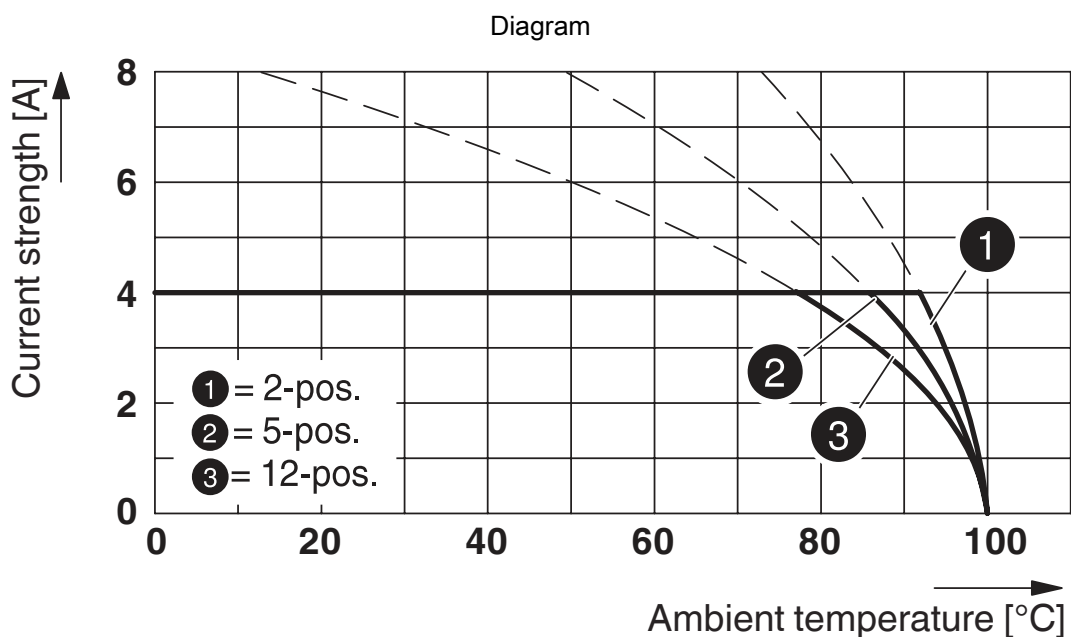
Type: FK-MC 0,5/...-ST-2,5 with MCD 0,5/...-G1-2,5 HT BK

1768004

<https://www.phoenixcontact.com/pc/products/1768004>



Type: FK-MC 0,5/...-ST-2,5 with MCV 0,5/...-G-2,5

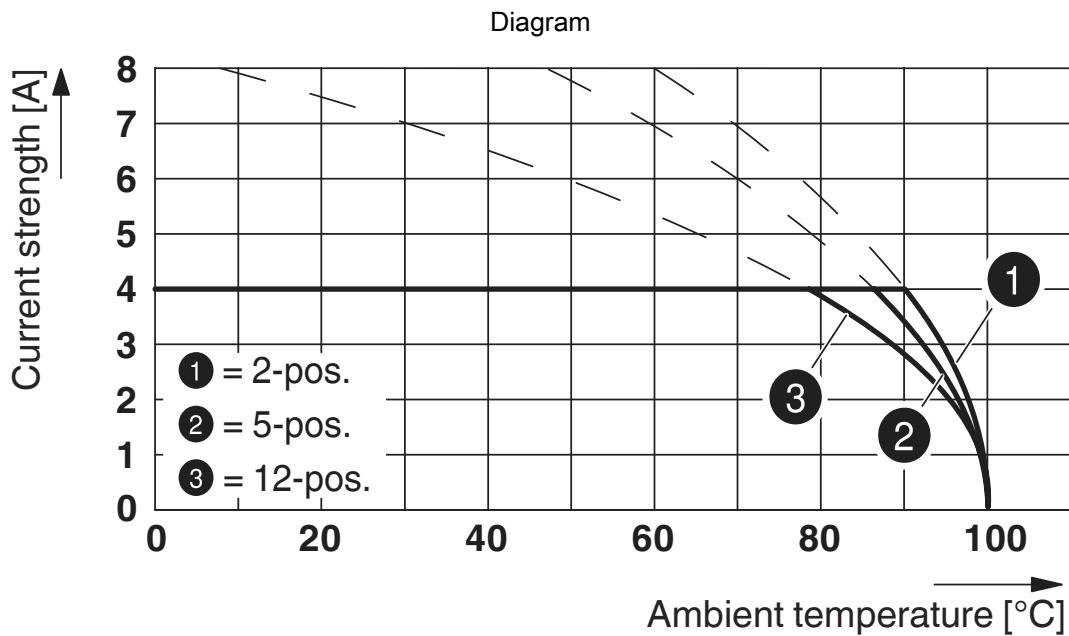


Type: FK-MC 0,5/...-ST-2,5 with MC 0,5/...-G-2,5

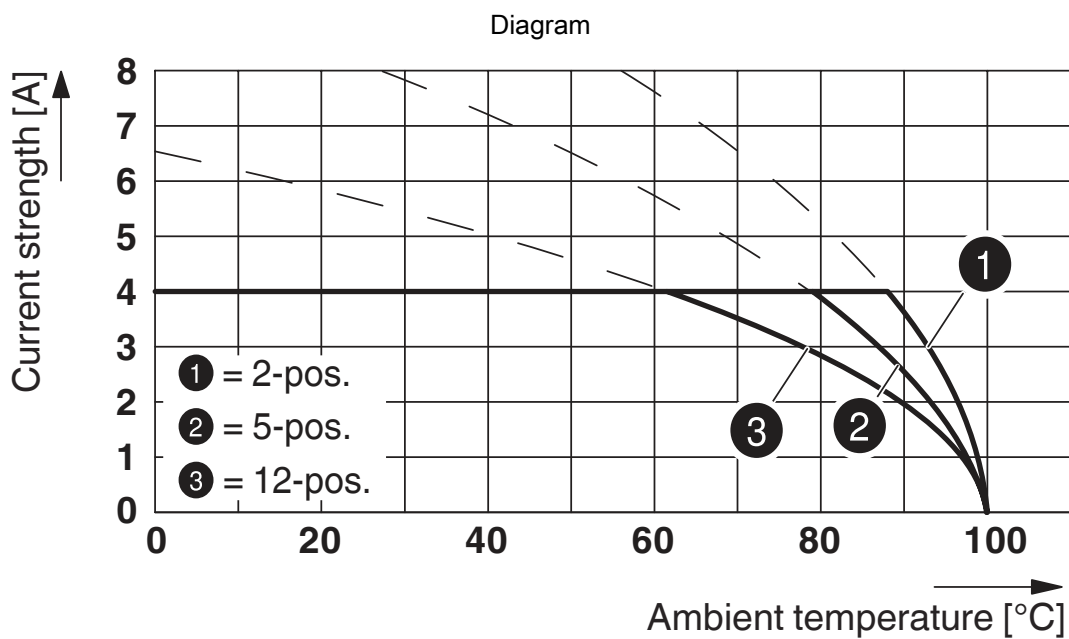


1768004

<https://www.phoenixcontact.com/pc/products/1768004>



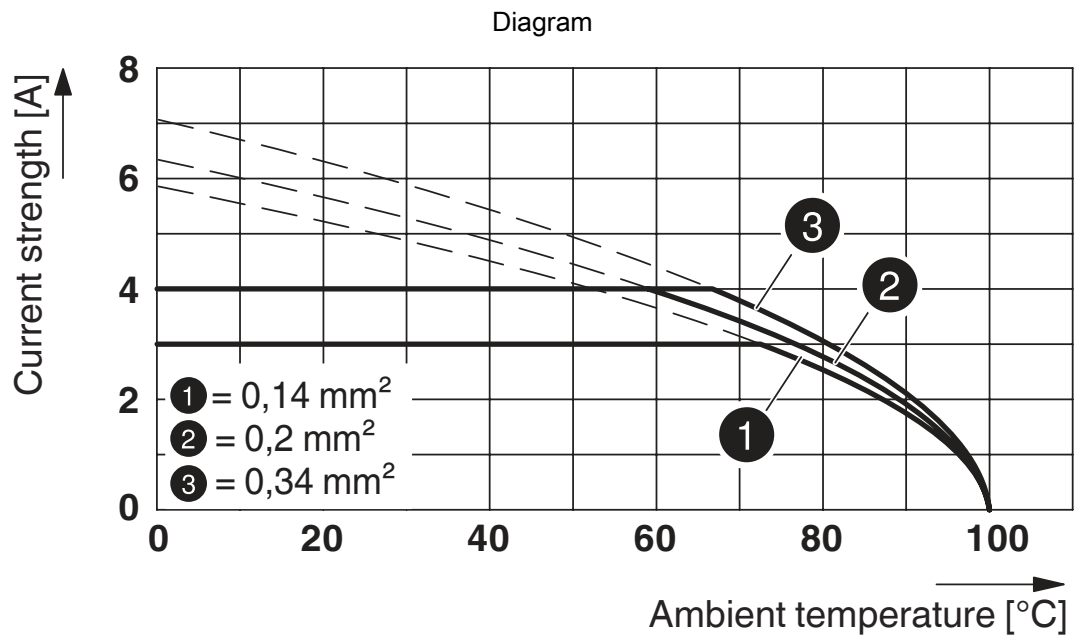
Type: FK-MC 0,5/...-ST-2,5 with MC 0,5/...-G-2,5 THT



Type: FK-MC 0,5/...-ST-2,5 with MCD 0,5/...-G1-2,5

1768004

<https://www.phoenixcontact.com/pc/products/1768004>



Type: FK-MC 0,5/...-ST-2,5 with MC 0,5/...-G-2,5

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1768004>



**EAC**

Approval ID: B.01687



**cULus Recognized**

Approval ID: E60425-19990913

	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
Use group B				
	125 V	4 A	28 - 20	-



**VDE Gutachten mit Fertigungsüberwachung**

Approval ID: 40013394

	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
	100 V	4 A	-	0.2 - 0.5

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## Classifications

### ECLASS

ECLASS-11.0	27460202
ECLASS-12.0	27460202
ECLASS-13.0	27460202

### ETIM

ETIM 8.0	EC002638
----------	----------

### UNSPSC

UNSPSC 21.0	39121400
-------------	----------

# FK-MC 0,5/ 4-ST-2,5 BK - PCB connector



1768004

<https://www.phoenixcontact.com/pc/products/1768004>

## Environmental product compliance

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

Phoenix Contact 2023 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachmarktstraße 8  
D-32825 Blomberg  
+49 (0) 5235-3 00  
[info@phoenixcontact.com](mailto:info@phoenixcontact.com)