

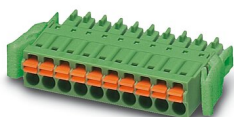
FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



1952021

<https://www.phoenixcontact.com/de/produkte/1952021>

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PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, product range: FMC 1,5/-ST-RF, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, locking: Snap-in locking, mounting: Self-locking flange, 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
- Intuitive locking mechanism prevents accidental disconnection

Commercial Data

Item number	1952021
Packing unit	250 pc
Minimum order quantity	250 pc
Sales Key	E1 - Leiterplattenanschl.
Product Key	AABFAC
Catalog Page	Page 201 (C-1-2013)
GTIN	4017918942663
Weight per Piece (including packing)	1,63 g
Weight per Piece (excluding packing)	1,63 g
Customs tariff number	85366990
Country of origin	DE

Technical Data

Product properties

Type	Standard
Product line	COMBICON Connectors S
Product type	PCB plug
Product family	FMC 1,5/...-ST-RF
Number of positions	2
Pitch	3.5 mm
Number of connections	2
Number of rows	1
Mounting flange	Self-locking flange
Number of potentials	2
Solder pins per potential	1

Electrical properties

Nominal current I_N	8 A
Nominal voltage U_N	160 V
Degree of pollution	3
Contact resistance	2.7 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
	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
Type of contact	Female connector

Interlock

Locking type	Snap-in locking
Mounting flange	Self-locking flange

Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross section solid	0.2 mm² ... 1.5 mm²
Conductor cross section flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16

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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	0.14 mm ² ... 0.75 mm ²
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / -
Stripping length	10 mm

Specifications for ferrules without insulating collar

recommended crimping tool	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

Specifications for ferrules with insulating collar

recommended crimping tool	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 ... 10 mm
	Cross section: 0.34 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm
	Cross section: 0.75 mm ² ; Length: 10 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

Material data – actuating element

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

Dimensions

Dimensional drawing	
Pitch	3.5 mm
Width [w]	17.1 mm
Height [h]	7.8 mm
Length [l]	22.9 mm

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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Mechanical tests

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 ² / solid / > 10 N
	0.2 mm ² / flexible / > 10 N
	1.5 mm ² / solid / > 40 N
	1.5 mm ² / flexible / > 40 N

Insertion and withdrawal forces

Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	5 N
Withdraw strength per pos. approx.	4 N

Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
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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)
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	2.7 mΩ
Contact resistance R_2	2.8 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

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

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Tested number of positions	12
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Insulation resistance

Specification	IEC 60512-3-1:2002-02
Insulation resistance, neighboring positions	> 5 MΩ

Temperature cycles

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

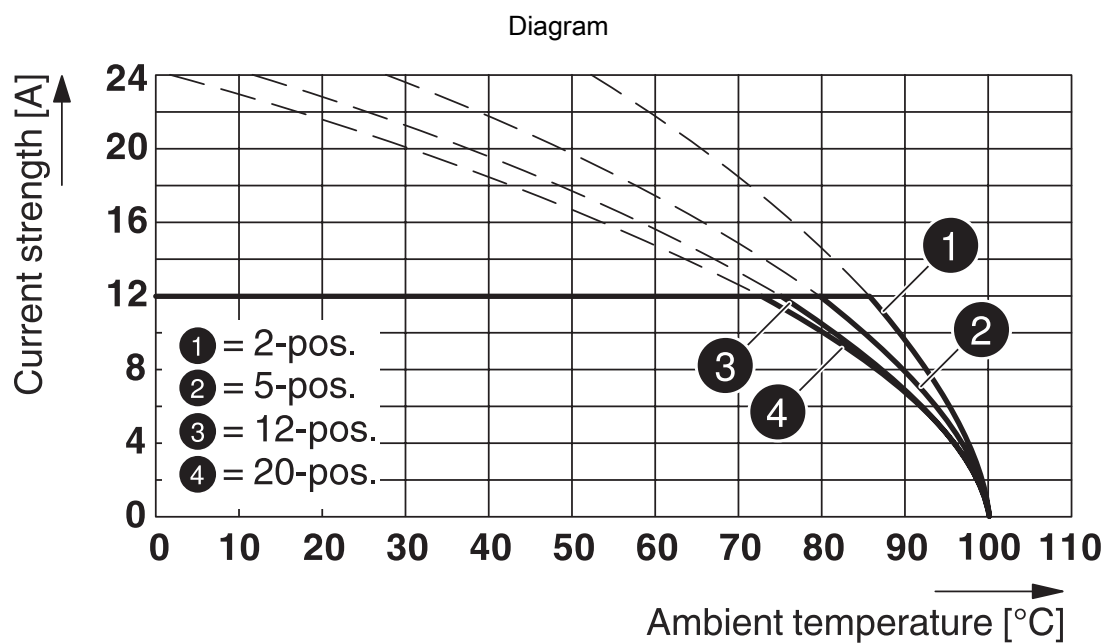
Air clearances and creepage distances |

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

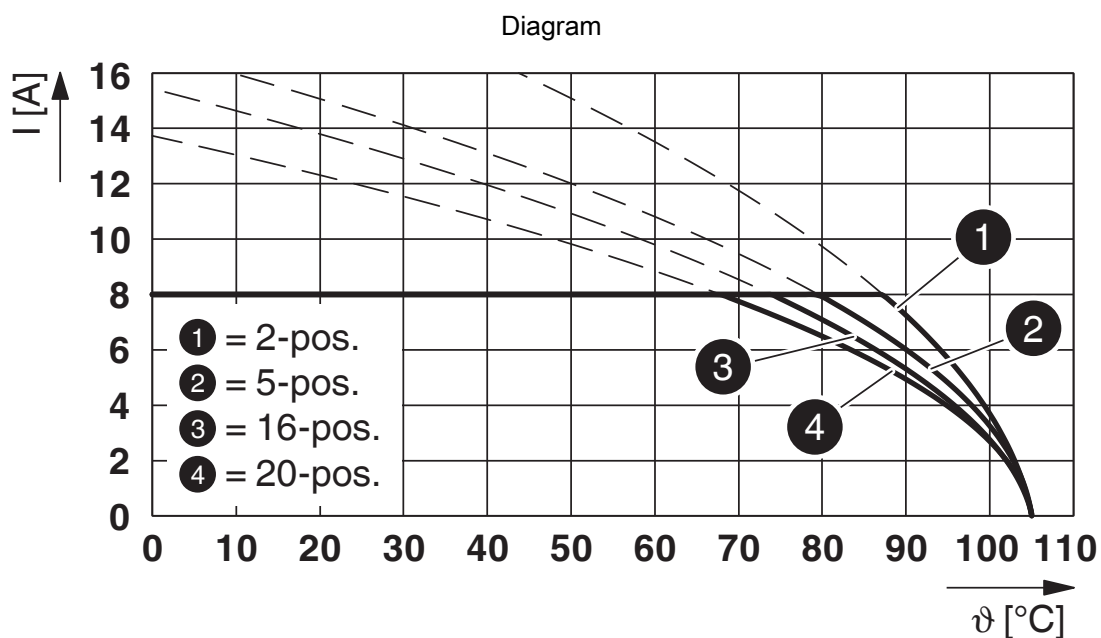
Packaging specifications

Type of packaging	packed in cardboard
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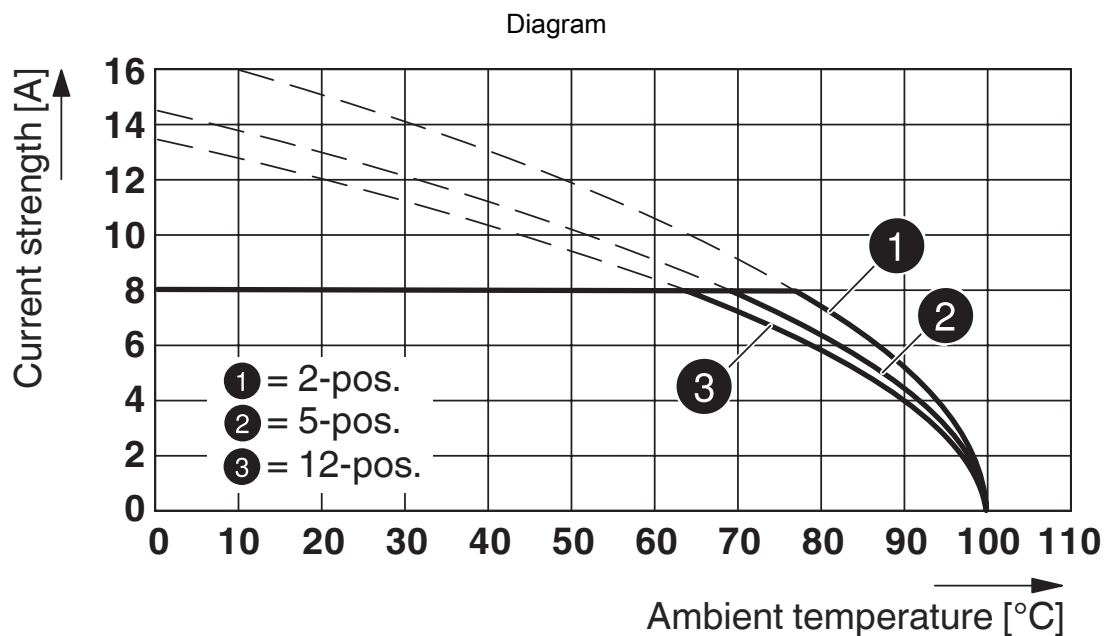
Drawings



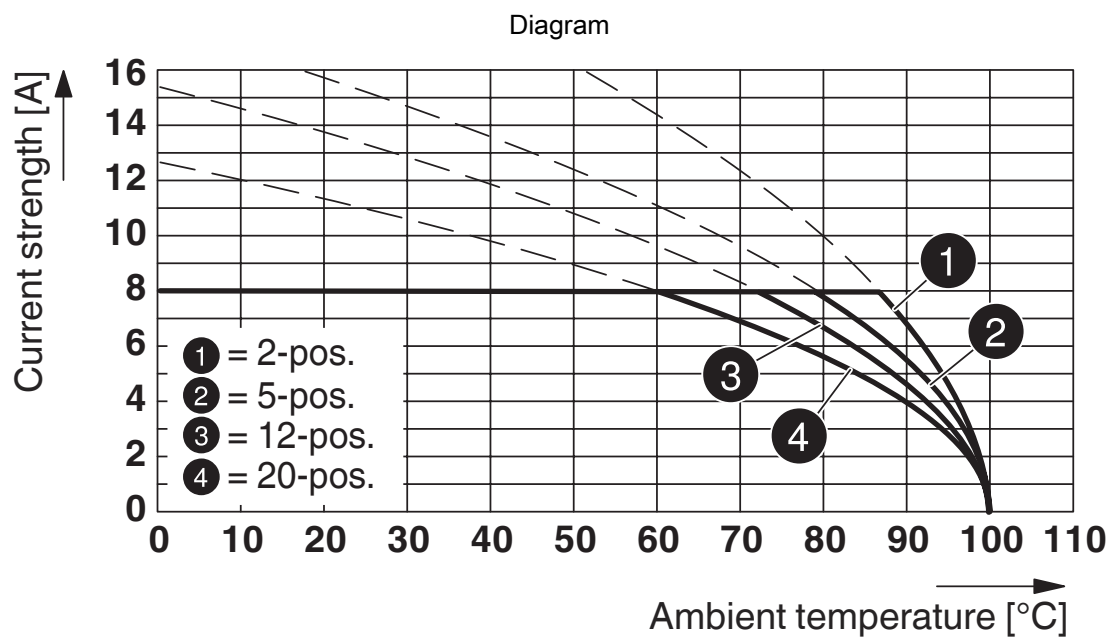
Type: FMC 1,5/...-ST-3,5-RF with MCV 1,5/...-G-3,5-RN



Type: FMC 1,5/...-ST-3,5-RF with MC 1,5/...-G-3,5-RN

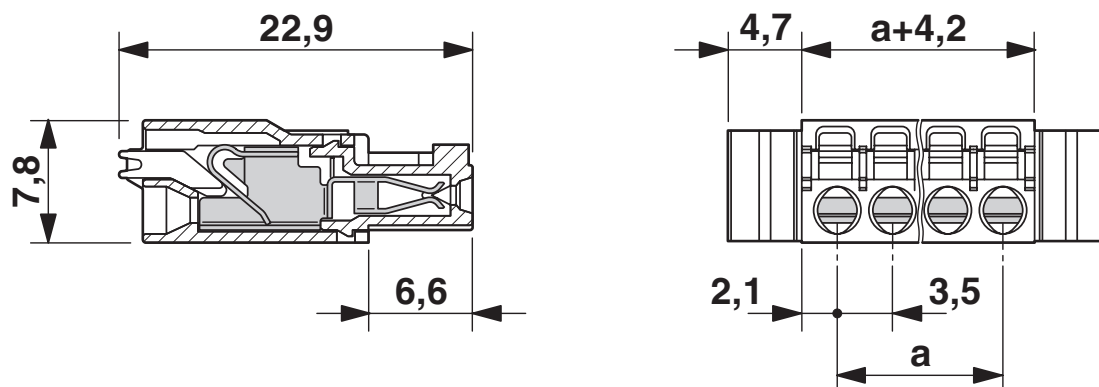


Type: FMC 1,5/...-ST-3,5-RF with IFMC 1,5/...-ST-3,5-RN

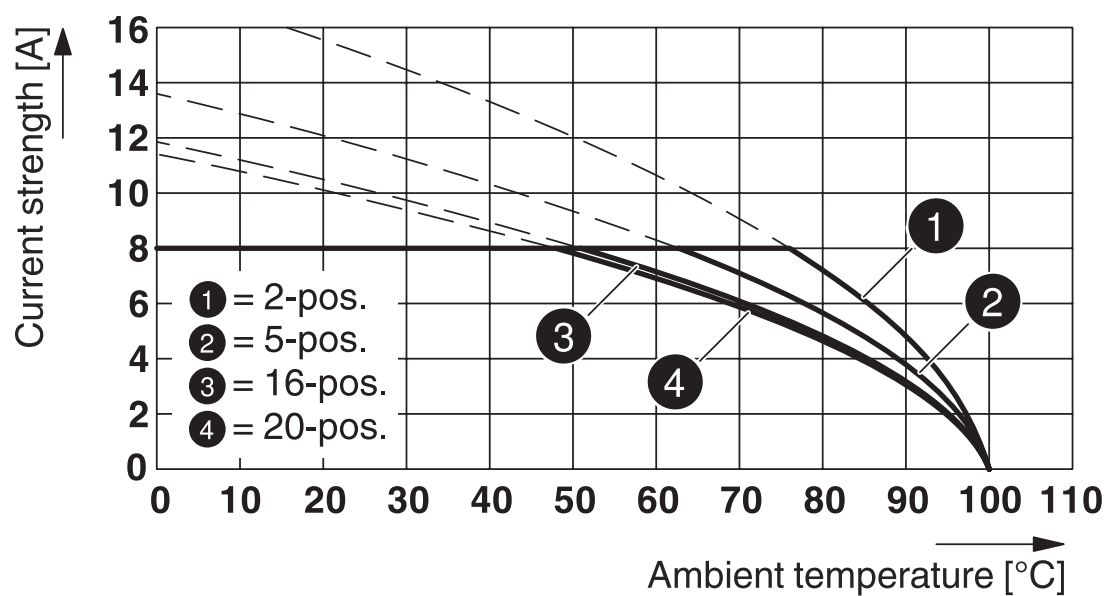


Type: FMC 1,5/...-ST-3,5-RF with MCV 1,5/...-G-3,5-RN P...THRR...

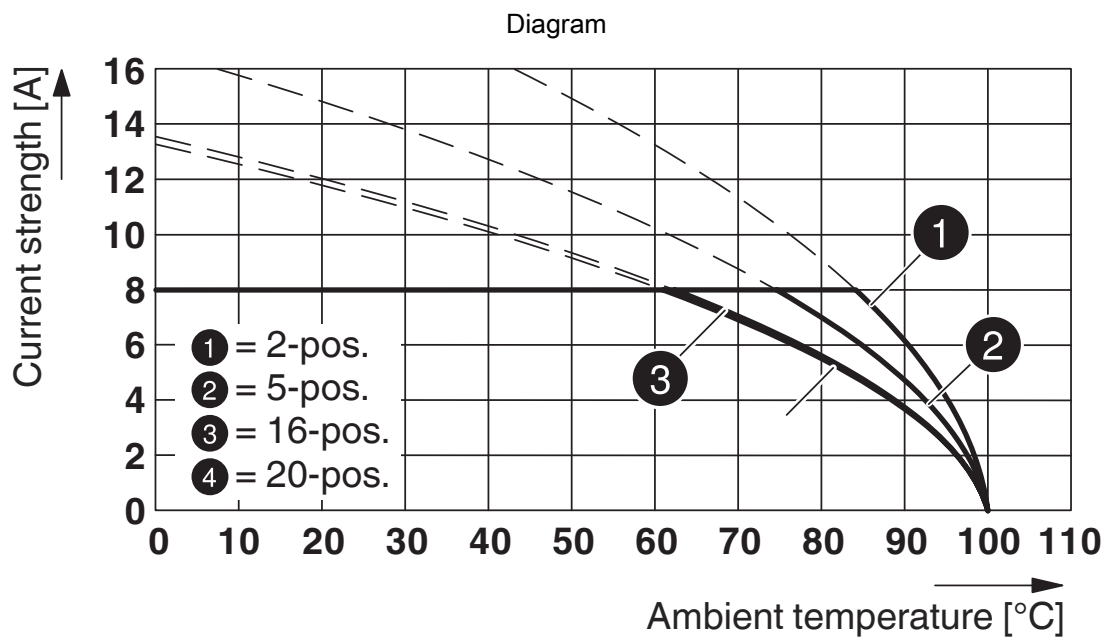
Dimensional drawing



Diagram



Type: FMC 1,5/...-ST-3,5-RF with MCDN 1,5/...-G1-3,5 RNP..THR



Type: FMC 1,5/...-ST-3,5-RF with MCDNV 1,5/...-G1-3,5 RNP...THR

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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Approvals

	IECEE CB Scheme			
	Approval ID: DE1-60987-B1B2			
		Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG
		160 V	8 A	-
				Cross Section mm ²
				0.2 - 1.5

	EAC			
	Approval ID: B.01687			

	cULus Recognized			
	Approval ID: E60425-19920306			
		Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG
Use group B				Cross Section mm ²
Standard	150 V	8 A	24 - 16	-
Use group C				
Factory wiring	50 V	8 A	24 - 16	-

	VDE Zeichengenehmigung			
	Approval ID: 40011723			
		Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG
		160 V	8 A	-
				Cross Section mm ²
				0.2 - 1.5

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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Classifications

ECLASS

ECLASS-9.0	27440309
ECLASS-10.0.1	27440309
ECLASS-11.0	27460202

ETIM

ETIM 8.0	EC002638
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UNSPSC

UNSPSC 21.0	39121400
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FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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Environmental Product Compliance

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

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Accessories

SK U/2,8 WH:UNBEDRUCKT - Marker card

0803883

<https://www.phoenixcontact.com/de/produkte/0803883>



Marker card, Sheet, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, Office printing systems, mounting type: adhesive, for terminal block width: 210 mm, lettering field size: 186 x 2.8 mm, Number of individual labels: 3600

B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/de/produkte/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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CRIMPFOX 6 - Crimping pliers

1212034

<https://www.phoenixcontact.com/de/produkte/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

SZS 0,4X2,5 VDE - Screwdriver

1205037

<https://www.phoenixcontact.com/de/produkte/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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A 0,25- 5 - Ferrule

3202465

<https://www.phoenixcontact.com/de/produkte/3202465>



Ferrule, length: 5 mm, color: silver

A 0,25- 7 - Ferrule

3202478

<https://www.phoenixcontact.com/de/produkte/3202478>



Ferrule, length: 7 mm, color: silver

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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A 0,34- 7 - Ferrule

3009202

<https://www.phoenixcontact.com/de/produkte/3009202>



Ferrule, length: 7 mm, color: silver

A 0,5 - 8 - Ferrule

3202481

<https://www.phoenixcontact.com/de/produkte/3202481>



Ferrule, length: 8 mm, color: silver

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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A 0,5 -10 - Ferrule

3202494

<https://www.phoenixcontact.com/de/produkte/3202494>



Ferrule, length: 10 mm, color: silver

A 0,75- 8 - Ferrule

3202504

<https://www.phoenixcontact.com/de/produkte/3202504>



Ferrule, length: 8 mm, color: silver

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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A 0,75-10 - Ferrule

3200234

<https://www.phoenixcontact.com/de/produkte/3200234>



Ferrule, length: 10 mm, color: silver

A 1 - 8 - Ferrule

3202517

<https://www.phoenixcontact.com/de/produkte/3202517>



Ferrule, length: 8 mm, color: silver

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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A 1 -10 - Ferrule

3200250

<https://www.phoenixcontact.com/de/produkte/3200250>



Ferrule, length: 10 mm, color: silver

A 1,5 -10 - Ferrule

3200276

<https://www.phoenixcontact.com/de/produkte/3200276>



Ferrule, length: 10 mm, color: silver

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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AI 0,14- 8 GY -1000 - Ferrule

3203011

<https://www.phoenixcontact.com/de/produkte/3203011>

Ferrule, sleeve length: 8 mm, length: 12.5 mm, color: gray



AI 0,34- 8 TQ - Ferrule

3203066

<https://www.phoenixcontact.com/de/produkte/3203066>

Ferrule, sleeve length: 8 mm, length: 12.5 mm, color: turquoise



FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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AI 0,34-10 TQ - Ferrule

3241129

<https://www.phoenixcontact.com/de/produkte/3241129>



Ferrule, sleeve length: 10 mm, length: 14.5 mm, color: turquoise

AI 0,5 - 8 WH - Ferrule

3200014

<https://www.phoenixcontact.com/de/produkte/3200014>



Ferrule, sleeve length: 8 mm, length: 14 mm, color: white

FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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AI 0,5 -10 WH - Ferrule

3201275

<https://www.phoenixcontact.com/de/produkte/3201275>

Ferrule, sleeve length: 10 mm, length: 16 mm, color: white



AI 0,75- 8 GY - Ferrule

3200519

<https://www.phoenixcontact.com/de/produkte/3200519>

Ferrule, sleeve length: 8 mm, length: 14 mm, color: gray



FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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AI 0,75-10 GY - Ferrule

3201288

<https://www.phoenixcontact.com/de/produkte/3201288>

Ferrule, sleeve length: 10 mm, length: 16 mm, color: gray



AI 0,25- 8 YE - Ferrule

3203037

<https://www.phoenixcontact.com/de/produkte/3203037>

Ferrule, sleeve length: 8 mm, length: 12.5 mm, color: yellow



FMC 1,5/ 2-ST-3,5-RF - Printed-circuit board connector



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MC 1,5/ 2-G-3,5-RN - PCB header

1731675

<https://www.phoenixcontact.com/de/produkte/1731675>



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, product range: MC 1,5/...-G-RN, pitch: 3.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Engagement nose, type of packaging: packed in cardboard

MCV 1,5/ 2-G-3,5-RN - PCB header

1731471

<https://www.phoenixcontact.com/de/produkte/1731471>



PCB headers, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, product range: MCV 1,5/...-G-RN, pitch: 3.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Engagement nose, type of packaging: packed in cardboard

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