

# PCB header - DMC 1,5/ 3-G1F-3,5-LR P20THR



1787027

<https://www.phoenixcontact.com/us/products/1787027>

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PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 2, number of positions: 3, number of connections: 6, product range: DMC 1,5/-G1F-THR, pitch: 3.5 mm, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON DFMC 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting: Lock & release threaded flange, type of packaging: packed in cardboard

## Your advantages

- Designed for integration into the SMT soldering process
- Screwable flange for superior mechanical stability
- Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- Conductor connection on several levels enables higher contact density
- Small component size for applications where space is at a premium

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## Commercial Data

Item number	1787027
Packing unit	1 pc
Minimum order quantity	50 pc
Sales Key	A01
Product Key	AABTJA
Catalog Page	Page 187 (C-1-2013)
GTIN	4046356596534
Weight per Piece (including packing)	2.728 g
Weight per Piece (excluding packing)	2.26 g
Customs tariff number	85366930
Country of origin	DE

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## Technical Data

### Product properties

Type	Headers
Product line	COMBICON Connectors S
Product type	PCB headers
Number of positions	3
Pitch	3.5 mm
Number of connections	6
Number of rows	2
Mounting flange	Lock & release threaded flange
Number of potentials	6
Pin layout	Linear pinning

### Electrical properties

Nominal current $I_N$	8 A
Nominal voltage $U_N$	160 V
Pollution degree	3
Contact resistance	2 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

### Mounting

Mounting type THR soldering	THR soldering
Mounting type	THR soldering

### Processing notes

Process	Reflow/wave soldering
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	260 °C
Solder cycles in the reflow	3

### Flange

Tightening torque	0.2 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 (3 - 5 μm Sn)

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Metal surface contact area (middle layer)	Nickel (1 - 3 $\mu\text{m}$ Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 $\mu\text{m}$ Sn)
Metal surface soldering area (middle layer)	Nickel (1 - 3 $\mu\text{m}$ Ni)

## Material data - housing

Housing color	black (9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

## Dimensions

Dimensional drawing	
Pitch	3.5 mm
Width w	17.5 mm
Height [h]	12.8 mm
Length [l]	11.6 mm
Installed height	10.8 mm
Solder pin length [P]	2 mm

## PCB design

Pin spacing	2.50 mm
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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 <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	1.5 mm <sup>2</sup> / solid / > 40 N
	1.5 mm <sup>2</sup> / flexible / > 40 N

### Insertion and withdrawal forces

Result	Test passed
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No. of cycles	25
Insertion strength per pos. approx.	3 N
Withdraw strength per pos. approx.	2 N

## Contact holder in insert

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

## 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

## Dimension check

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

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	20

### 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	IIIa
Comparative tracking index (IEC 60112)	CTI 175
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)	2.5 mm
Rated insulation voltage (III/2)	160 V

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Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.6 mm
Rated insulation voltage (II/2)	250 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)	2.5 mm

## 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 - 60.1 Hz)
Sweep speed	50 m/s <sup>2</sup> (60.1 - 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 <sub>1</sub>	2 mΩ
Contact resistance R <sub>2</sub>	2.3 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	105 °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

## Packaging specifications

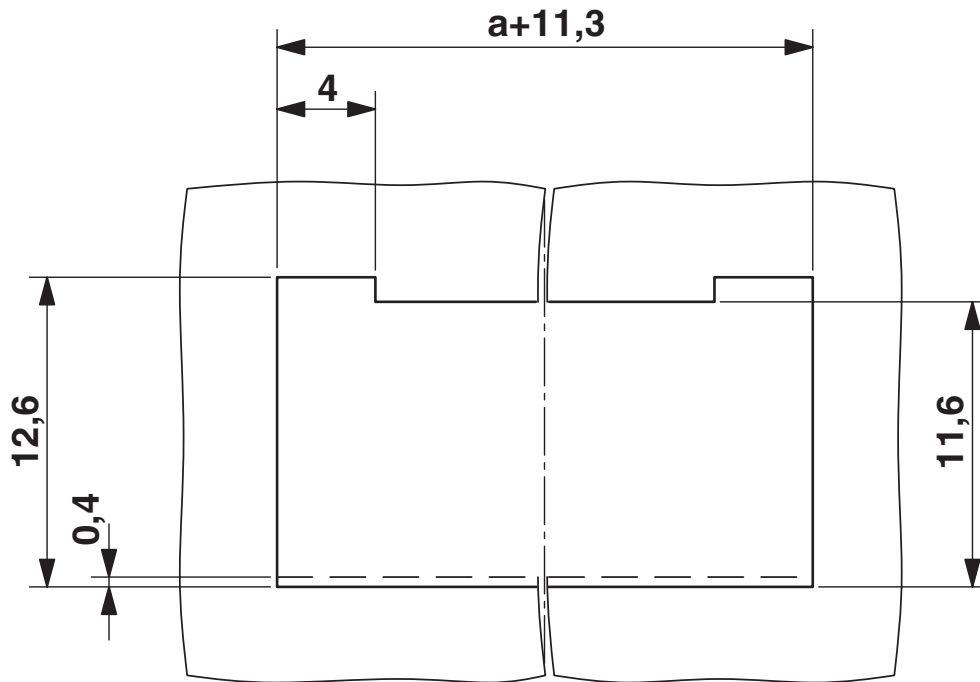
Type of packaging	packed in cardboard
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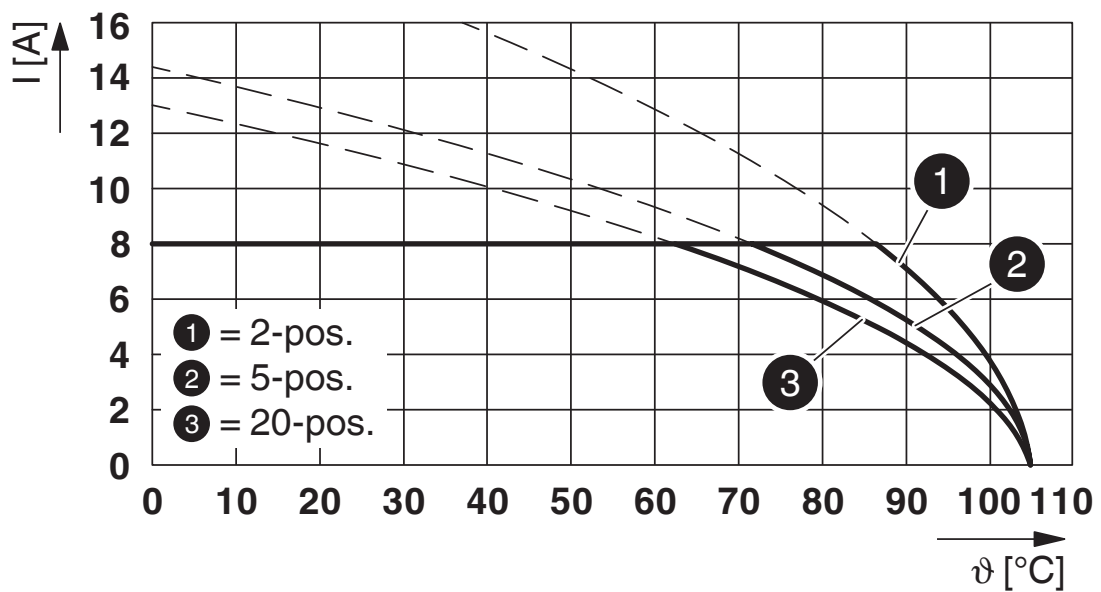
## Drawings

Schematic diagram



Panel cutout

Diagram



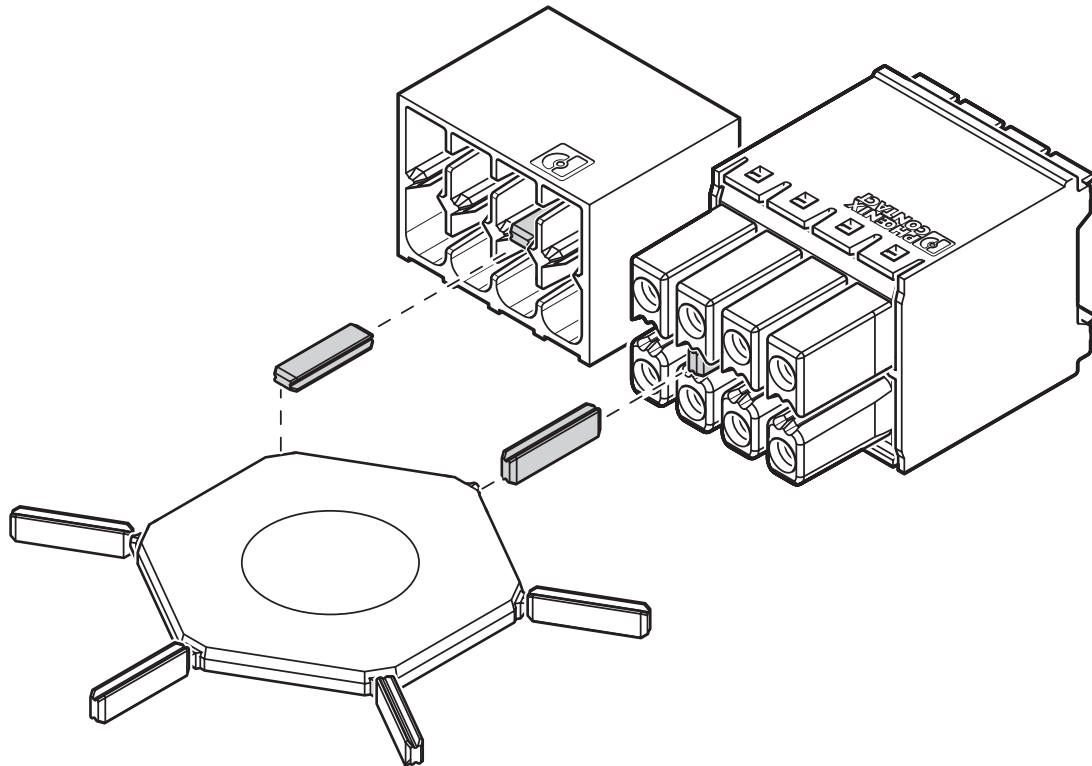
Type: DFMC 1,5/...-ST-3,5-LR with DMC 1,5/...-G1F-3,5-LR P...THR

# PCB header - DMC 1,5/ 3-G1F-3,5-LR P20THR

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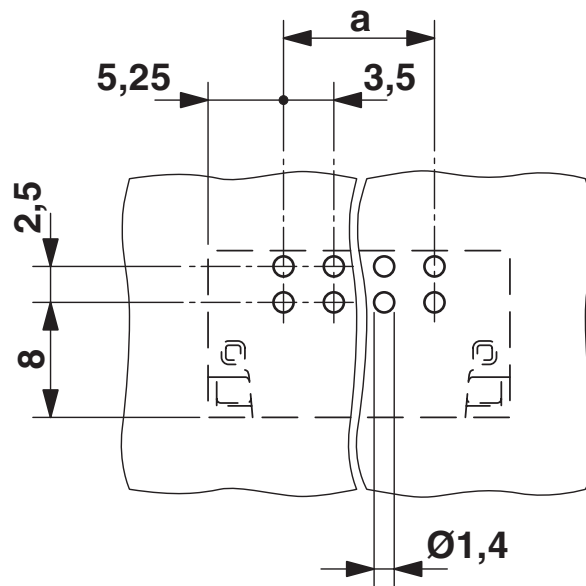
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Schematic diagram



Use of the CP-DMC... coding profile

Drilling plan/solder pad geometry



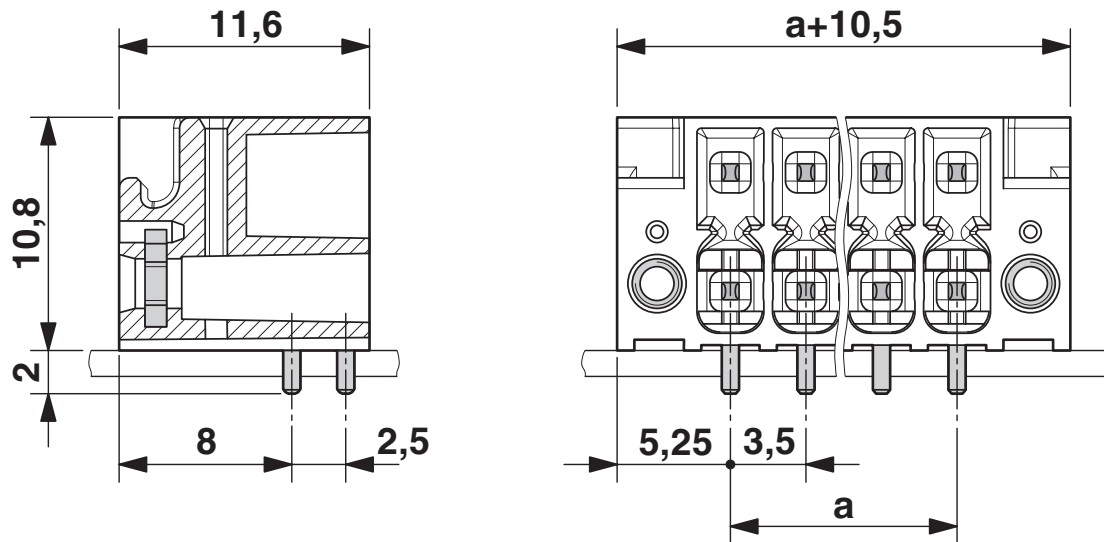


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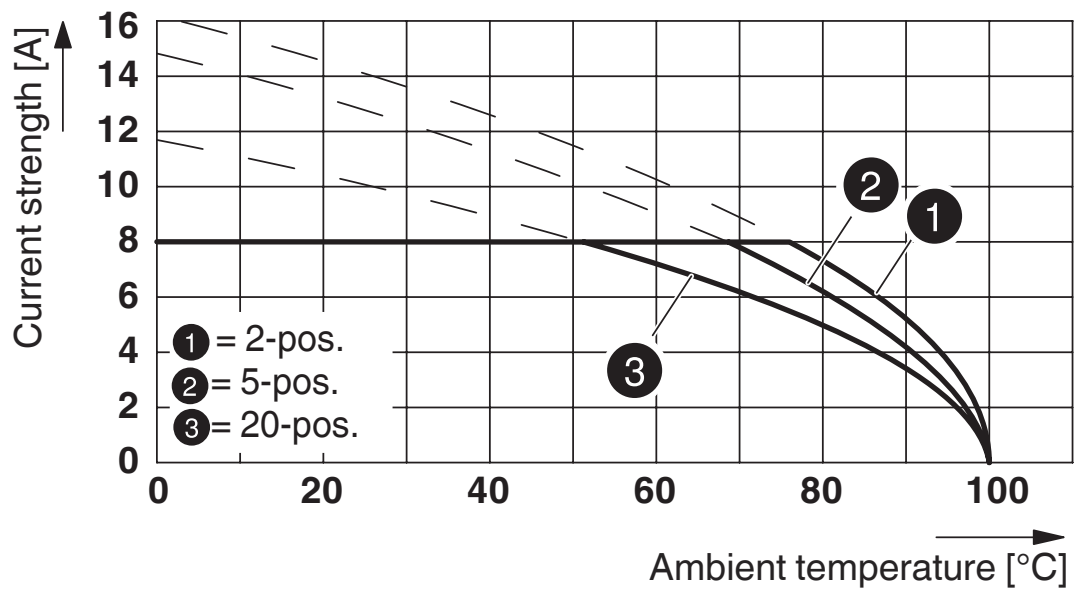
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Dimensional drawing



Diagram



Type: DFMC 1,5/...-STF-3,5 with DMC 1,5/...-G1F-3,5-LR P...THR

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## Approvals

 <b>IECEE CB Scheme</b> Approval ID: DE1-60359_B1_B2				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	160 V	8 A	-	-

 <b>EAC</b> Approval ID: B.01687				
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 <b>cULus Recognized</b> Approval ID: E60425-20110128				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B	150 V	8 A	-	-
Use group C	50 V	8 A	-	-
Use group D	300 V	8 A	-	-

 <b>VDE report with production monitoring</b> Approval ID: 40038423				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	160 V	8 A	-	-

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## Classifications

### ECLASS

ECLASS-9.0	27440402
ECLASS-10.0.1	27440402
ECLASS-11.0	27460201

### ETIM

ETIM 8.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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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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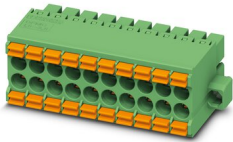
## Accessories

### PCB connector

PCB connector - DFMC 1,5/ 3-STF-3,5 - 1790302

<https://www.phoenixcontact.com/us/products/1790302>

Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 3 with 6 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin



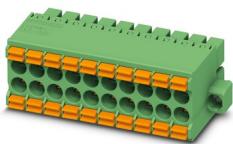
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### PCB connector

PCB connector - DFMC 1,5/ 2-STF-3,5 - 1790292

<https://www.phoenixcontact.com/us/products/1790292>

Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 2 with 4 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin



# PCB header - DMC 1,5/ 3-G1F-3,5-LR P20THR

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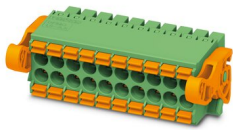
<https://www.phoenixcontact.com/us/products/1787027>

## PCB connector

PCB connector - DFMC 1,5/ 3-ST-3,5-LR - 1790496

<https://www.phoenixcontact.com/us/products/1790496>

Plug, nominal current: 8 A, rated voltage (III/2): 160 V, number of positions: 3 with 6 contacts, pitch: 3.5 mm, connection method: spring-cage connection, color: green, contact surface: tin



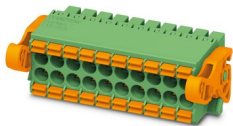
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## PCB connector

PCB connector - DFMC 1,5/ 2-ST-3,5-LR - 1790483

<https://www.phoenixcontact.com/us/products/1790483>

PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 4, number of rows: 2, number of positions: 2, number of connections: 4, product range: DFMC 1,5/...-ST-LR, 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 DFMC 1,5, locking: Snap-in locking, mounting: Lock & Release ejector lever, type of packaging: packed in cardboard



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## Coding profile

Coding profile - CP-DMC 1,5 NAT - 1790647

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Coding profile, for insertion between the coding ribs of the connector and the header following the reflow soldering process, insulating material, color: natural



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