

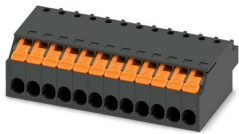
# XPC 1,5/12-ST-3,5 BK - PCB connector



1464116

<https://www.phoenixcontact.com/in/products/1464116>

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PCB connector, 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: Socket, number of rows: 1, number of positions: 12, product range: XPC 1,5/...-ST, pitch: 3.5 mm, connection method: Push-X-connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Highly convenient operation thanks to direct, effortless, and tool-free conductor connection
- Quick connection of all conductor types with and even without ferrules
- Reliable wiring thanks to acoustic and visual feedback
- Quick conductor release by simply pressing the orange release button
- Plug-in compatibility with existing headers of the COMBICON portfolio
- Quick and convenient testing using integrated test option

## Commercial Data

Item number	1464116
Packing unit	50 pc
Minimum order quantity	50 pc
Product Key	AABGAA
GTIN	4063151857608
Weight per Piece (including packing)	2.22 g
Weight per Piece (excluding packing)	2.22 g
Country of origin	DE

# XPC 1,5/12-ST-3,5 BK - PCB connector



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## Technical Data

### Product properties

Product line	COMBICON Connectors S
Product type	PCB connector
Product family	XPC 1,5/...-ST
Number of positions	12
Pitch	3.5 mm
Number of rows	1

### Electrical properties

Nominal current $I_N$	8 A
Nominal voltage $U_N$	160 V
Degree of pollution	3
Contact resistance	2.2 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
Rated voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV

### Connection data

#### Connection technology

Connector system	COMBICON MC 1,5
Nominal cross section	1.5 mm <sup>2</sup>
Type of contact	Socket

#### Interlock

Locking type	without
Mounting flange	without

#### Conductor connection

Connection method	Push-X-connection
Conductor/PCB connection direction	0 °
Conductor cross section rigid	0.34 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	20 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / -
Stripping length	10 mm

Specifications for ferrules without insulating collar

# XPC 1,5/12-ST-3,5 BK - PCB connector



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recommended crimping tool	1212034 CRIMPFOX 6
ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm
	Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm
	Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm
	Cross section: 1.5 mm <sup>2</sup> ; 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: 0.25 mm <sup>2</sup> ; Length: 8 mm
	Cross section: 0.34 mm <sup>2</sup> ; Length: 8 mm ... 10 mm
	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm
	Cross section: 0.75 mm <sup>2</sup> ; 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)

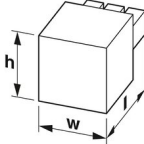
### Material data - housing

Color (Housing)	black (9005)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

### Material data – actuating element

Color (Actuating element)	orange (2003)
Insulating material	PBT
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

## Dimensions

Dimensional drawing	
Pitch	3.5 mm
Width [w]	43.63 mm
Height [h]	12.46 mm

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Length [l]	19.3 mm
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## 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

### 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	0.34 mm <sup>2</sup> / solid / > 15 N
	0.5 mm <sup>2</sup> / flexible / > 20 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
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	5 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

### Dimension check

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

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## 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	50 m/s <sup>2</sup> (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 <sub>1</sub>	2.2 mΩ
Contact resistance R <sub>2</sub>	2.1 mΩ
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 MΩ

### Climatic test

Specification	ISO 22479:2019-05
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 ... 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

## 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	I
Comparative tracking index (IEC 60112)	CTI 600
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV

# XPC 1,5/12-ST-3,5 BK - PCB connector



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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

# XPC 1,5/12-ST-3,5 BK - PCB connector

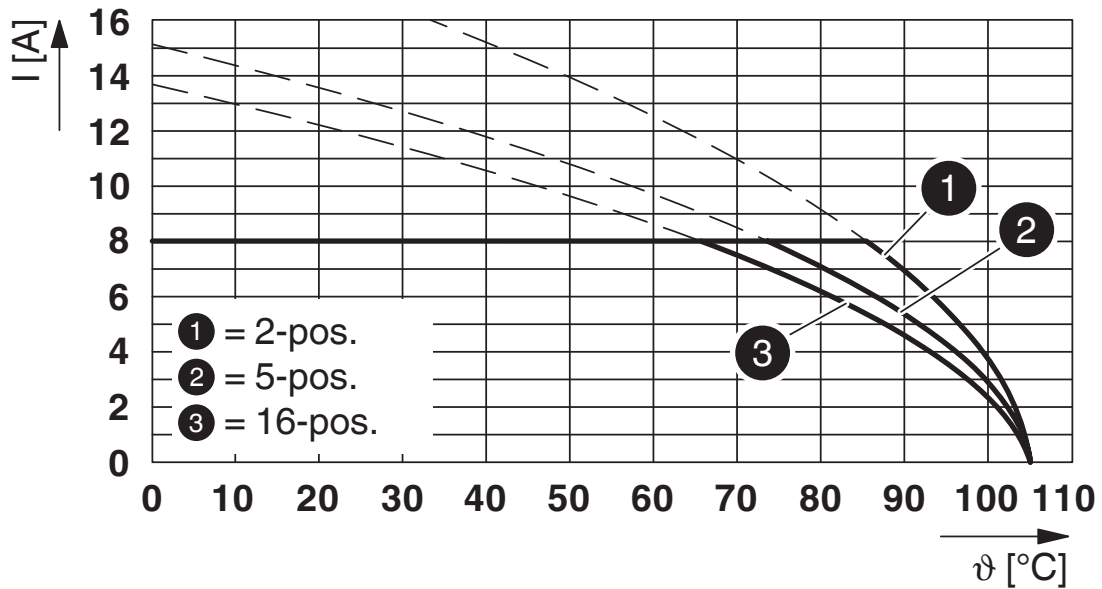


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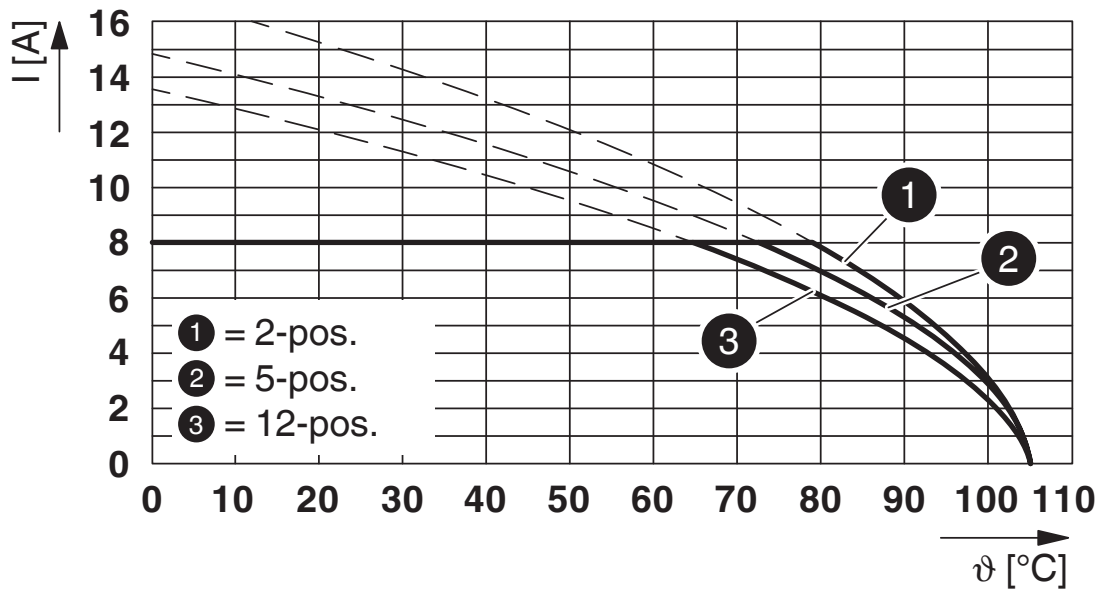
## Drawings

Diagram



Type: XPC 1,5/...-ST-3,5 with MC 1,5/...-G-3,5 P... THR

Diagram



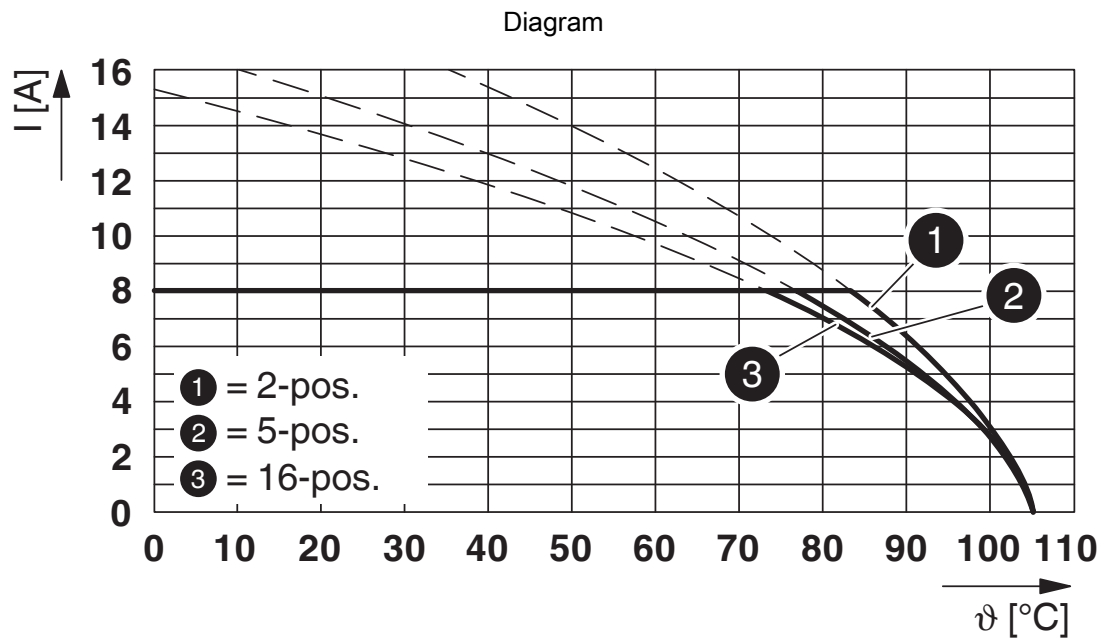
Type: XPC 1,5/...-ST-3,5 with IFMC 1,5/...-ST-3,5

# XPC 1,5/12-ST-3,5 BK - PCB connector



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Type: XPC 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5



# XPC 1,5/12-ST-3,5 BK - PCB connector



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## Classifications

### ECLASS

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

# XPC 1,5/12-ST-3,5 BK - PCB connector

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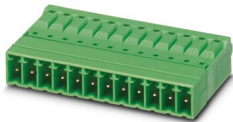
<https://www.phoenixcontact.com/in/products/1464116>

## Accessories

### IFMC 1,5/12-ST-3,5 - Printed-circuit board connector

1844099

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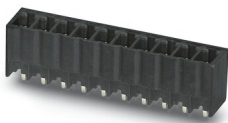
PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: IFMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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### MCV 1,5/12-G-3,5 P20 THRR72 - PCB header

1781081

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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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MCV 1,5/..-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 72 mm wide tape, For user information and design recommendations for through-hole reflow technology, go to: Downloads

# XPC 1,5/12-ST-3,5 BK - PCB connector

1464116

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## MC 1,5/12-G-3,5 P26 THR - PCB header

1788709

<https://www.phoenixcontact.com/in/products/1788709>



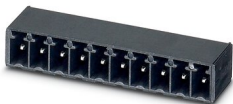
PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/..-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

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## MC 1,5/12-G-3,5 P26 THRR72 - PCB header

1788712

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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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/..-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 72 mm wide tape

# XPC 1,5/12-ST-3,5 BK - PCB connector

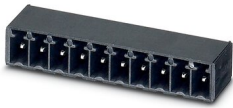
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<https://www.phoenixcontact.com/in/products/1464116>

## MC 1,5/12-G-3,5 P14 THRR72 - PCB header

1789151

<https://www.phoenixcontact.com/in/products/1789151>



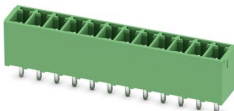
PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/...-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 72 mm wide tape

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## MCV 1,5/12-G-3,5 - PCB header

1843703

<https://www.phoenixcontact.com/in/products/1843703>



PCB headers, 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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MCV 1,5/...-G, 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: without, mounting: without, type of packaging: packed in cardboard

# XPC 1,5/12-ST-3,5 BK - PCB connector

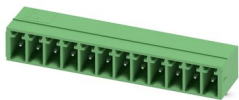
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<https://www.phoenixcontact.com/in/products/1464116>

## MC 1,5/12-G-3,5 - PCB header

1844317

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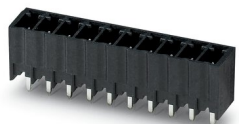
PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/..-G, pitch: 3.5 mm, screw head form: L Slotted, 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: without, mounting: without, type of packaging: packed in cardboard

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## MCV 1,5/12-G-3,5 P26 THR - PCB header

1779569

<https://www.phoenixcontact.com/in/products/1779569>



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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MCV 1,5/..-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

# XPC 1,5/12-ST-3,5 BK - PCB connector



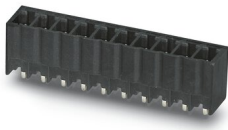
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## MCV 1,5/12-G-3,5 P14 THR - PCB header

1780396

<https://www.phoenixcontact.com/in/products/1780396>



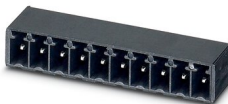
PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MCV 1,5/...-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, For user information and design recommendations for through-hole reflow technology, go to: Downloads

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## MC 1,5/12-G-3,5 P20 THR - PCB header

1788929

<https://www.phoenixcontact.com/in/products/1788929>



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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/...-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

# XPC 1,5/12-ST-3,5 BK - PCB connector



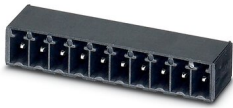
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## MC 1,5/12-G-3,5 P14 THR - PCB header

1789148

<https://www.phoenixcontact.com/in/products/1789148>



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: Pin, number of potentials: 12, number of rows: 1, number of positions: 12, number of connections: 12, product range: MC 1,5/..-G-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

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