

# IPCV 16/ 9-G-10,16 - PCB header



1969768

<https://www.phoenixcontact.com/pc/products/1969768>

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PCB headers, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A, rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Socket, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: IPCV 16/..-G, pitch: 10.16 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm, number of solder pins per potential: 3, plug-in system: COMBICON PC 16, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections
- Integrated double steel spring provides additional safety in the event of temperature and power fluctuations

## Commercial data

Item number	1969768
Packing unit	50 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	AAESCE
Catalog page	Page 572 (C-1-2013)
GTIN	4017918971076
Weight per piece (including packing)	35.24 g
Weight per piece (excluding packing)	32.894 g
Customs tariff number	85366930
Country of origin	PL

## Technical data

### Product properties

Product type	PCB headers
Product family	IPCV 16/..-G
Product line	COMBICON Connectors XL
Type	Inverted
Number of positions	9
Pitch	10.16 mm
Number of connections	9
Number of rows	1
Number of potentials	9
Mounting flange	without
Pin layout	Linear pinning
Solder pins per potential	3

### Electrical properties

Nominal current $I_N$	76 A
Nominal voltage $U_N$	1000 V
Degree of pollution	3
Contact resistance	0.4 mΩ
Rated voltage (III/3)	1000 V
Rated surge voltage (III/3)	8 kV
Rated voltage (III/2)	1000 V
Rated surge voltage (III/2)	8 kV
Rated voltage (II/2)	1000 V
Rated surge voltage (II/2)	8 kV

### Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

### 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	Electroplated silver
Metal surface contact area (top layer)	Silver (4 - 8 μm Ag)
Metal surface soldering area (top layer)	Silver (4 - 8 μm Ag)

#### Material data - housing

Color (Housing)	green (6021)
Insulating material	PA

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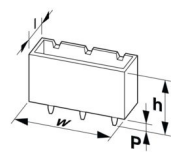
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Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C

## 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	10.16 mm
Width [w]	92.24 mm
Height [h]	36.1 mm
Length [l]	13.6 mm
Installed height	32.1 mm
Solder pin length [P]	4 mm
Pin dimensions	0.8 x 1.2 mm
PCB design	
Pin spacing	10.16 mm
Hole diameter	1.7 mm

## 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 60512-7:1993-08 (Polarization)
Result	Test passed

## Contact holder in insert

Specification	IEC 60512-8:1993-01
Contact holder in insert Requirements >20 N	Test passed

## Insertion and withdrawal forces

Result	Test passed
No. of cycles	50
Insertion strength per pos. approx.	12 N
Withdraw strength per pos. approx.	15 N

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	9

### Insulation resistance

Specification	IEC 60512-3-1:2002-02
Insulation resistance, neighboring positions	$10^{12} \Omega$

### 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)	1000 V
Rated surge voltage (III/3)	8 kV
minimum clearance value - non-homogenous field (III/3)	8 mm
minimum creepage distance (III/3)	12.5 mm
Rated insulation voltage (III/2)	1000 V
Rated surge voltage (III/2)	8 kV
minimum clearance value - non-homogenous field (III/2)	8 mm
minimum creepage distance (III/2)	8 mm
Rated insulation voltage (II/2)	1000 V
Rated surge voltage (II/2)	8 kV
minimum clearance value - non-homogenous field (II/2)	5.5 mm
minimum creepage distance (II/2)	5.5 mm

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:1995-03
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min

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Amplitude	0.35 mm (10 Hz ... 60.1 Hz)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h

## Durability test

Specification	IEC 60512-5:1992-08
Impulse withstand voltage at sea level	9.8 kV
Contact resistance R <sub>1</sub>	0.4 mΩ
Contact resistance R <sub>2</sub>	0.5 mΩ
Insertion/withdrawal cycles	50

## 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	4.26 kV

## Ambient conditions

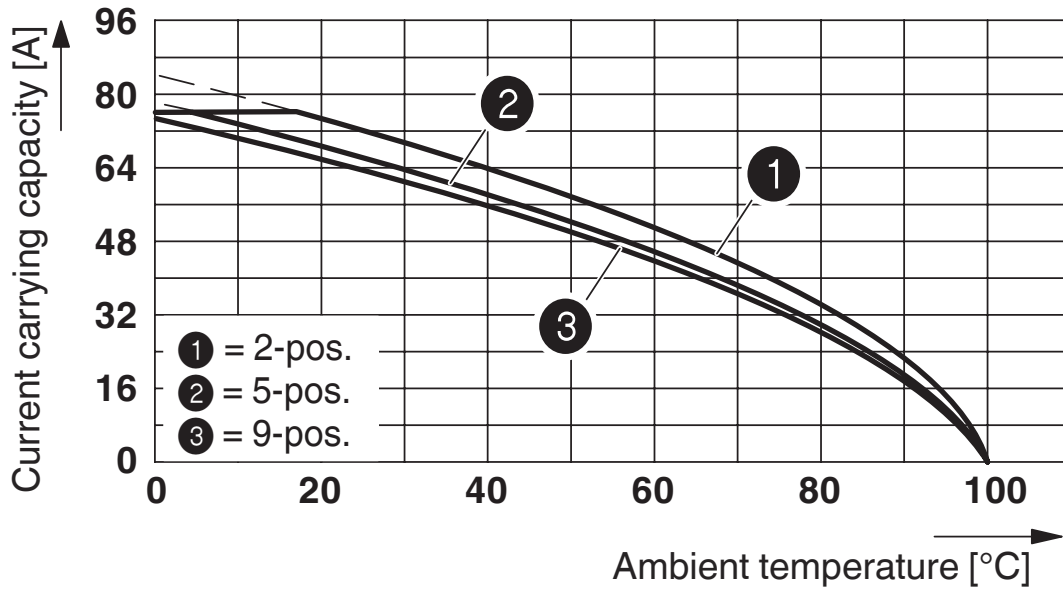
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
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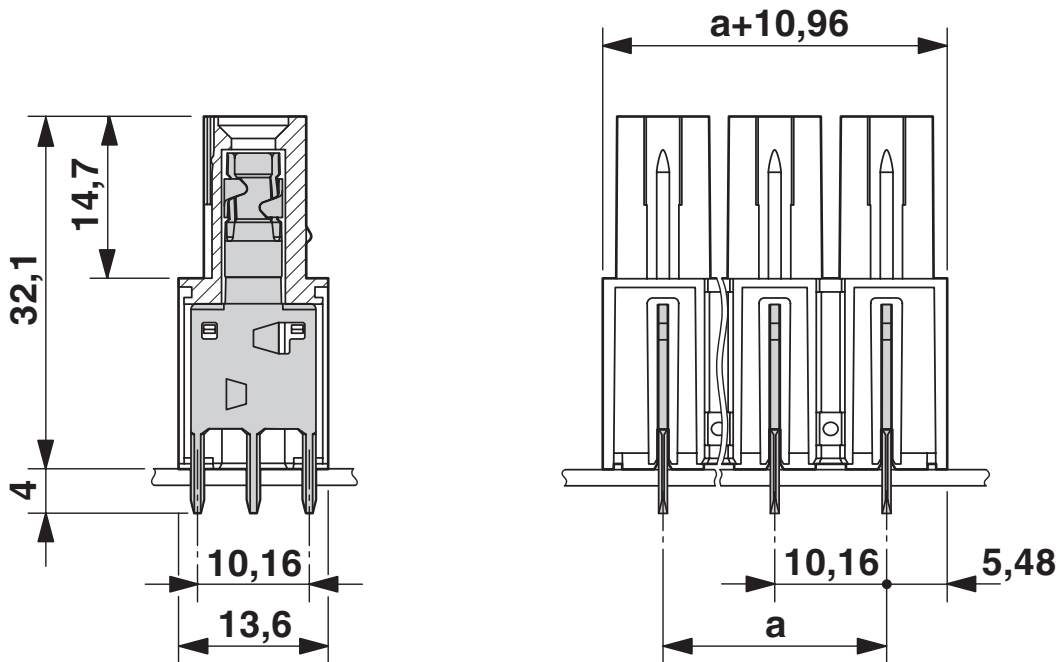
Drawings

Diagram



Derating curve for: ISPC 16/..-ST-10,16 with IPCV 16/..-G-10,16

Dimensional drawing



The figure shows the 3-pos. version

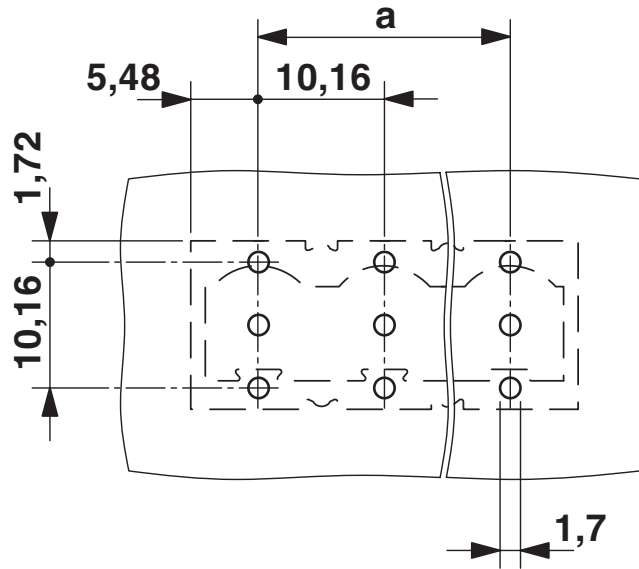
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Drilling plan/solder pad geometry



The figure shows the 3-pos. version

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1969768>

 <b>cULus Recognized</b> Approval ID: E60425-20040202				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
Use group B	300 V	66 A	-	-
Use group C	300 V	66 A	-	-
Use group D	600 V	5 A	-	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40055586				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
	1000 V	76 A	-	-



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## Classifications

### ECLASS

ECLASS-11.0	27460201
ECLASS-12.0	27460201
ECLASS-13.0	27460201

### ETIM

ETIM 9.0	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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## Accessories

### CP-PC RD - Coding profile

1701967

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Coding profile, for plugging into the coding ribs of the plug at a later date, insulating material, color: Red



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### SK U/5,0 WH:UNBEDRUCKT - Marker card

0803922

<https://www.phoenixcontact.com/pc/products/0803922>

Marker card, Din A4, 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 5 mm, Number of individual labels: 630



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## IPC 16/ 9-ST-10,16 - PCB connector

1969441

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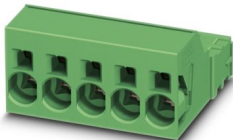
PCB connector, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A, rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: IPC 16/...-ST, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON PC 16, locking: without, mounting: without, type of packaging: packed in cardboard

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## ISPC 16/ 9-ST-10,16 - PCB connector

1748613

<https://www.phoenixcontact.com/pc/products/1748613>



PCB connector, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A, rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: ISPC 16/...-ST, pitch: 10.16 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON PC 16, locking: without, mounting: without, type of packaging: packed in cardboard

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## PC 6-16/ 9-G1-10,16 - PCB header

1996391

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PCB headers, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A (41 A in combination with PC 6 plug), rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: PC 6-16/...-G1, pitch: 10.16 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm, number of solder pins per potential: 3, plug-in system: COMBICON PC 16, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

## PC 6-16/ 9-G1U-10,16 - PCB header

1996304

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PCB headers, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A (41 A in combination with PC 6 plug), rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: PC 6-16/...-G1U, pitch: 10.16 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm, number of solder pins per potential: 3, plug-in system: COMBICON PC 16, Pin connector pattern alignment: reversed, locking: without, mounting: without, type of packaging: packed in cardboard

# IPCV 16/ 9-G-10,16 - PCB header

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## PCV 6-16/ 9-G1-10,16 - PCB header

1998852

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PCB headers, nominal cross section: 16 mm<sup>2</sup>, color: green, nominal current: 76 A (41 A in combination with PC 6 plug), rated voltage (III/2): 1000 V, contact surface: Silver, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: PCV 6-16/..-G1, pitch: 10.16 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm, number of solder pins per potential: 3, plug-in system: COMBICON PC 16, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

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