

# Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

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PCB connector, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Silver

The figure shows a 5-pos. version of the product

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors
- Inverted connector with pin contacts for touch-proof device outputs or free-hanging cable/cable connections



## Key Commercial Data

Packing unit	25 pc
GTIN	
GTIN	4017918943691

## Technical data

### Item properties

Brief article description	Printed-circuit board connector
Plug-in system	POWER COMBICON 16
Type of contact	Male connector
Range of articles	IPC 16/...-ST
Pitch	10.16 mm
Number of positions	9
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted (L)
Screw thread	M4
Locking	without
Number of levels	1

# Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

## Technical data

### Item properties

Number of connections	9
Number of potentials	9

### Electrical parameters

Nominal current	76 A
Nom. voltage	1000 V
Rated voltage	1000 V
Rated voltage (III/2)	1000 V
Rated voltage (II/2)	1000 V
Rated surge voltage (III/3)	8 kV
Rated surge voltage (III/2)	8 kV
Rated surge voltage (II/2)	6 kV

### Connection capacity

Connection method	Screw connection with tension sleeve
pluggable	Yes
Conductor cross section solid	0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross section flexible	0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross section AWG / kcmil	18 ... 6
Conductor cross section flexible, with ferrule without plastic sleeve	0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
2 conductors with same cross section, solid	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.75 mm <sup>2</sup> ... 6 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	- / 5.4 mm
Stripping length	12 mm
Torque	1.7 Nm ... 1.8 Nm

### 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 terminal point (top layer)	Silver (4 - 8 µm Ag)
Metal surface contact area (top layer)	Silver (4 - 8 µm Ag)

### Material data - housing

Housing color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600

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## Technical data

### Material data - housing

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

### Dimensions for the product

Caption	The figure shows the 3-pos. version
Length [ l ]	44.1 mm
Width [ w ]	94.48 mm
Height [ h ]	27.8 mm
Pitch	10.16 mm
Height (without solder pin)	27.8 mm

### Packaging information

Type of packaging	packed in cardboard
Pieces per package	25
Denomination packing units	Pcs.
Outer packaging type	Carton

### Ambient conditions

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

### Termination and connection method

Test – repeated connection and release	IEC 60999-1:1999-11
	Test passed
Test for conductor damage and slackening	IEC 60999-1:1999-11
	Test passed

### Pull-out test

Pull-out test	IEC 60999-1:1999-11
	Test passed
Conductor cross section / conductor type / tensile force	0.75 mm <sup>2</sup> / solid / > 30 N
	0.75 mm <sup>2</sup> / flexible / > 30 N
	16 mm <sup>2</sup> / solid / > 100 N
	16 mm <sup>2</sup> / flexible / > 100 N

### Mechanical tests according to standard

Test specification	IEC 61984
Visual inspection	IEC 60512-1:2001-01
Dimension check	IEC 60512-1:2001-01
Resistance of inscriptions	IEC 60068-2-70:1995-12
Insertion and withdrawal force	IEC 60512-7:1993-08

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## Technical data

### Mechanical tests according to standard

No. of cycles	50
Insertion strength per pos. approx.	12 N
Withdraw strength per pos. approx.	11 N
Polarization and coding	IEC 60512-7:1993-08 (Polarization)
Contact holder in insert	IEC 60512-8:1993-01
Test force per pos.	45 N

### Air clearances and creepage distances

Clearances and creepage distances	IEC 60664-1:2007-04
Specification	IEC 60664-1:2007-04
Minimum clearance - inhomogeneous field (III/3)	8 mm
Minimum clearance - inhomogeneous field (III/2)	8 mm
Minimum clearance - inhomogeneous field (II/2)	5.5 mm
Minimum creepage distance value (III/3)	12.5 mm
Minimum creepage distance value (III/2)	8 mm
Minimum creepage distance value (II/2)	5.5 mm

### Current carrying capacity / derating curves

Caption	Derating curve for: IPC 16/...-ST-10,16 with IPC 16/...-G-10,16
Reduction factor	0.8
Note	Representation based on IEC 60512-5-2:2002-02
	For number of positions, see diagram

### Mechanical tests (A)

Test specification	IEC 61984
Insertion strength per pos. approx.	12 N
Withdraw strength per pos. approx.	11 N
Polarization when inserted requirement >20 N	Test passed
Contact holder in insert requirements >20 N	Test passed

### Durability tests (B)

Specification	IEC 60512-5:1992-08
Contact resistance R <sub>1</sub>	0.3 mΩ
Insertion/withdrawal cycles	50
Contact resistance R <sub>2</sub>	0.4 mΩ
Impulse withstand voltage at sea level	9.8 kV
Power-frequency withstand voltage	4.26 kV
Insulation resistance, neighboring positions	> 10 TΩ

### Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	9
Conductor cross section	16 mm <sup>2</sup>

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## Technical data

### Thermal tests (C)

Test current	76 A
Upper limiting temperature requirements <100 °C	Test passed

### Climatic tests (D)

Specification	ISO 6988:1985-02
Cold stress	-40 °C/2 h
Thermal stress	100 °C/168 h
Corrosive stress	KFW 0.2 S/1 cycle
Impulse withstand voltage at sea level	9.8 kV
Power-frequency withstand voltage	4.26 kV

### Environmental and durability tests (E)

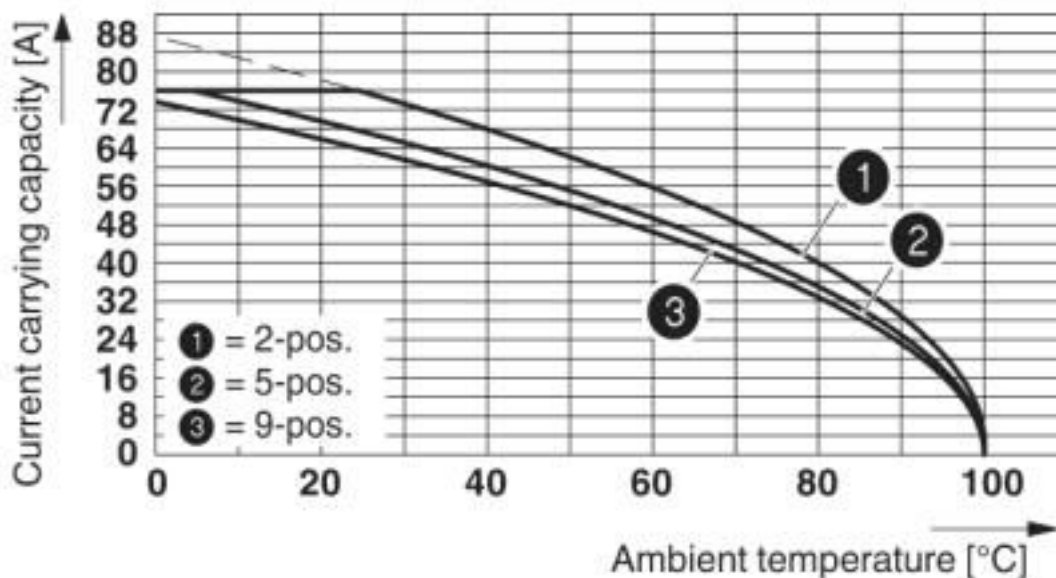
Result, degree of protection, IP code	IP20
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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

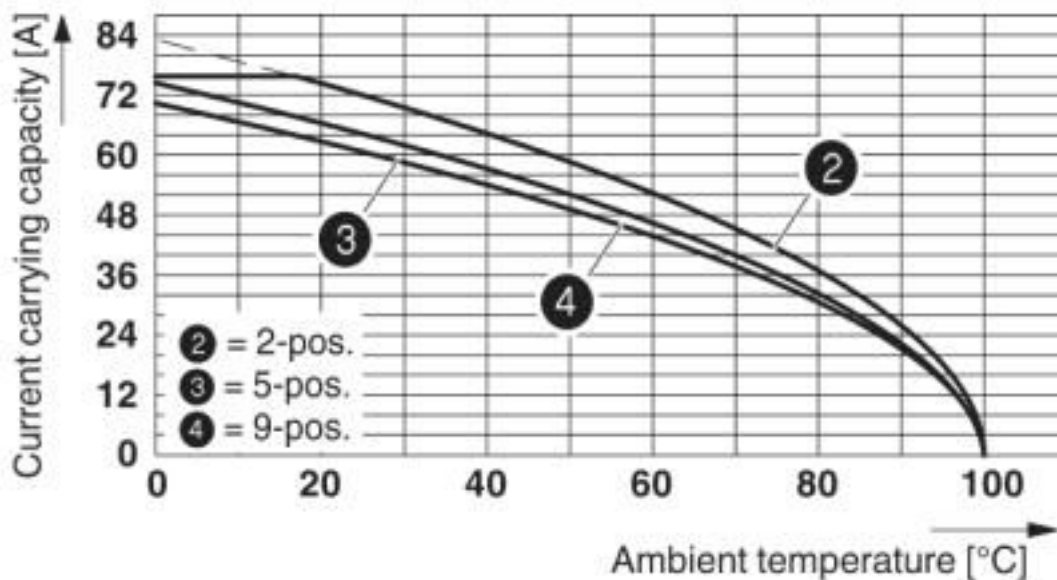
Diagram



Derating curve for: IPC 16/...-ST-10,16 with DFK-IPC 16/...-G-10,16

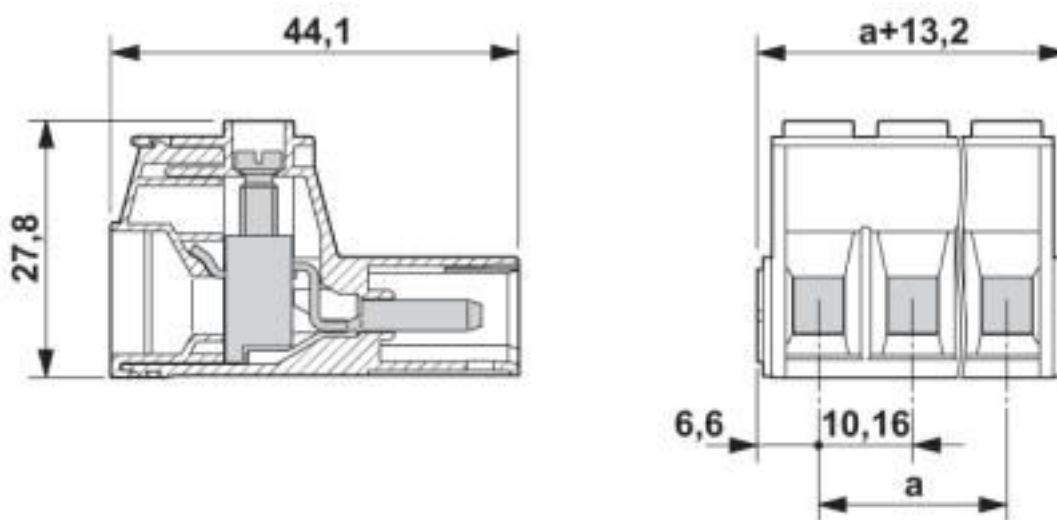
# Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

Diagram



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

Dimensional drawing



The figure shows the 3-pos. version

## Classifications

eCl@ss

eCl@ss 10.0.1	27440309
eCl@ss 4.0	27260700
eCl@ss 4.1	27260700
eCl@ss 5.0	27260700

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## Classifications

### eCl@ss

eCl@ss 5.1	27260700
eCl@ss 6.0	27260700
eCl@ss 7.0	27440309
eCl@ss 8.0	27440309
eCl@ss 9.0	27440309

### ETIM

ETIM 3.0	EC001121
ETIM 4.0	EC002638
ETIM 5.0	EC002638
ETIM 6.0	EC002638
ETIM 7.0	EC002638

### UNSPSC

UNSPSC 6.01	30211810
UNSPSC 7.0901	39121409
UNSPSC 11	39121409
UNSPSC 12.01	39121409
UNSPSC 13.2	39121409
UNSPSC 18.0	39121409
UNSPSC 19.0	39121409
UNSPSC 20.0	39121409
UNSPSC 21.0	39121409

## Approvals


### Approvals

#### Approvals

IECEE CB Scheme / SEV / EAC / cULus Recognized

#### Ex Approvals

### Approval details

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	CH-10653-M1
Nominal voltage UN	1000 V		

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## Approvals

Nominal current I <sub>N</sub>	76 A
mm <sup>2</sup> /AWG/kcmil	16

SEV		<a href="https://www.eurofins.ch/de/">https://www.eurofins.ch/de/</a>	IK-4468-M1
Nominal voltage U <sub>N</sub>	1000 V		
Nominal current I <sub>N</sub>	76 A		
mm <sup>2</sup> /AWG/kcmil	16		

EAC		B.01687
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cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	E60425-20040202
	B	C	
Nominal voltage U <sub>N</sub>	600 V	600 V	
Nominal current I <sub>N</sub>	55 A	55 A	
mm <sup>2</sup> /AWG/kcmil	20-6	20-6	

## Accessories

### Accessories

#### Coding element

Coding profile - CP-PC RD - 1701967

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



### Crimping tool

Crimping pliers - CRIMPFOX 6 - 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 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp



## Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

### Accessories

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Crimping pliers - CRIMPFOX 16 S - 1207983



Crimping pliers for ferrules up to 16 mm<sup>2</sup>

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### Screwdriver tools

Screwdriver - SZS 1,0X4,0 VDE - 1205066



Screwdriver, slot-headed, VDE insulated, size: 1.0 x 4.0 x 100 mm, 2-component grip, with non-slip grip

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### Terminal marking

Marker strip - SK 5,0 WH:REEL - 0805221



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5#mm, Number of individual labels: 90000

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### Additional products

Direct plug-in block - PCU 6/ 9-STD-10,16 - 1922705



Direct plug-in block, nominal current: 41 A, rated voltage (III/2): 1000 V, nominal cross section: 6 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Silver, mounting: Direct mounting

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Printed-circuit board connector - PC 16/ 9-ST-10,16 - 1967443



PCB connector, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Silver

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## Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

### Accessories

#### Printed-circuit board connector - TPC 16/ 9-ST-10,16 - 1715248



PCB connector, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Silver

#### Printed-circuit board connector - SPC 16/ 9-ST-10,16 - 1711336



PCB connector, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Push-in spring connection, color: green, contact surface: Silver

#### Feed-through header - IPC 16/ 9-G-10,16 - 1969603



PCB headers, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear three-way pinning, solder pin [P]: 4 mm

#### Feed-through header - IPC 16/ 9-GU-10,16 - 1969920



PCB headers, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm, Plug direction parallel to the PCB: connector part rotated by 180° with respect to the plug axis.

#### Feed-through header - IPCV 16/ 9-G-10,16 - 1969768



PCB headers, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4 mm

## Printed-circuit board connector - IPC 16/ 9-ST-10,16 - 1969441

### Accessories

#### Feed-through header - DFK-IPC 16/ 9-G-10,16 - 1702484



Feed-through header, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4.1 mm

#### Feed-through header - DFK-IPC 16/ 9-GU-10,16 - 1702565



Feed-through header, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4.1 mm

#### Feed-through header - DFK-IPCV 16/ 9-G-10,16 - 1703124



Feed-through header, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, color: green, contact surface: Silver, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4.1 mm

#### Feed-through plug - DFK-IPC 16/ 9-ST-10,16 - 1703768



Feed-through connector, nominal current: 76 A, rated voltage (III/2): 1000 V, nominal cross section: 16 mm<sup>2</sup>, number of positions: 9, pitch: 10.16 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Silver

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