

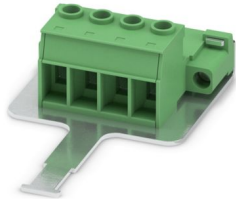
# IPC 16/ 4-STF-SH-10,16 - PCB connector



1970346

<https://www.phoenixcontact.com/us/products/1970346>

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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: Ag, contact connection type: Pin, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: IPC 16/-STF-SH, 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, Electrical properties: shielded, locking: Screw locking mechanism, mounting method: Screw flange, type of packaging: packed in cardboard

## 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
- Shield for adherence to the EMC requirements and an optional strain relief
- Screwable flange for superior mechanical stability

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1970346       |
| Packing unit                         | 25 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA05          |
| Product key                          | AAEABC        |
| GTIN                                 | 4017918971083 |
| Weight per piece (including packing) | 82.57 g       |
| Weight per piece (excluding packing) | 79.854 g      |
| Customs tariff number                | 85366990      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                           |                        |
|---------------------------|------------------------|
| Product type              | PCB connector          |
| Product family            | IPC 16/...-STF-SH      |
| Product line              | COMBICON Connectors XL |
| Type                      | Inverted               |
| Number of positions       | 4                      |
| Pitch                     | 10.16 mm               |
| Number of connections     | 4                      |
| Number of rows            | 1                      |
| Number of potentials      | 4                      |
| Mounting type             | Screw flange           |
| Electrical characteristic | shielded               |

### Electrical properties

#### Properties

|                             |          |
|-----------------------------|----------|
| Nominal current $I_N$       | 76 A     |
| Nominal voltage $U_N$       | 1000 V   |
| 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)  | 6 kV     |
| Electrical characteristic   | shielded |

### Connection data

#### Connection technology

|                         |                    |
|-------------------------|--------------------|
| Type                    | Inverted           |
| Connector system        | COMBICON PC 16     |
| Nominal cross section   | 16 mm <sup>2</sup> |
| Contact connection type | Pin                |

#### Interlock

|                   |                         |
|-------------------|-------------------------|
| Locking type      | Screw locking mechanism |
| Mounting type     | Screw flange            |
| Tightening torque | 0.3 Nm                  |

#### Conductor connection

|                                    |                                             |
|------------------------------------|---------------------------------------------|
| Connection method                  | Screw connection with tension sleeve        |
| Conductor/PCB connection direction | 0 °                                         |
| Conductor cross-section rigid      | 0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup> |

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|                                                                                           |                     |
|-------------------------------------------------------------------------------------------|---------------------|
| Conductor cross-section flexible                                                          | 0.75 mm² ... 16 mm² |
| Conductor cross-section AWG                                                               | 18 ... 6            |
| Conductor cross-section flexible, with ferrule without plastic sleeve                     | 0.5 mm² ... 16 mm²  |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve                      | 0.5 mm² ... 10 mm²  |
| 2 conductors with same cross section, solid                                               | 0.75 mm² ... 6 mm²  |
| 2 conductors with same cross section, flexible                                            | 0.75 mm² ... 6 mm²  |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve       | 0.5 mm² ... 4 mm²   |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm² ... 6 mm²   |
| Cylindrical gauge a x b / diameter                                                        | - / 5.4 mm          |
| Stripping length                                                                          | 12 mm               |
| Drive form screw head                                                                     | Slotted (L)         |
| Tightening torque                                                                         | 1.7 Nm ... 1.8 Nm   |

## Material specifications

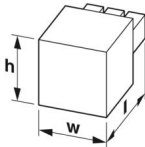
### Material data - contact

|                                          |                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                         | Cu alloy                                                                         |
| Surface characteristics                  | completely silver-plated                                                         |
| 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

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| 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       |

## Dimensions

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Pitch               | 10.16 mm                                                                             |
| Width [w]           | 58.4 mm                                                                              |

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|            |          |
|------------|----------|
| Height [h] | 29.05 mm |
| Length [l] | 94.05 mm |

## Mounting

### Flange

|                   |        |
|-------------------|--------|
| Tightening torque | 0.3 Nm |
|-------------------|--------|

## 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. |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Environmental and real-life conditions

### 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

### Air clearances and creepage distances | 1. Insulation coordination

|                                                        |                   |
|--------------------------------------------------------|-------------------|
| Specification                                          | IEC 61984:2008-10 |
| 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)                             | 6 kV              |
| minimum clearance value - non-homogenous field (II/2)  | 5.5 mm            |
| minimum creepage distance (II/2)                       | 5.5 mm            |

### Air clearances and creepage distances | 2. Insulation coordination

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| Specification                                          | IEC 60664-1:2020-05 |
| Insulating material group                              | I                   |
| Comparative tracking index (IEC 60112)                 | CTI 600             |
| Rated insulation voltage (III/3)                       | 1000 V AC/DC        |
| Rated surge voltage (III/3)                            | 8 kV                |
| minimum clearance value - non-homogenous field (III/3) | 8 mm                |

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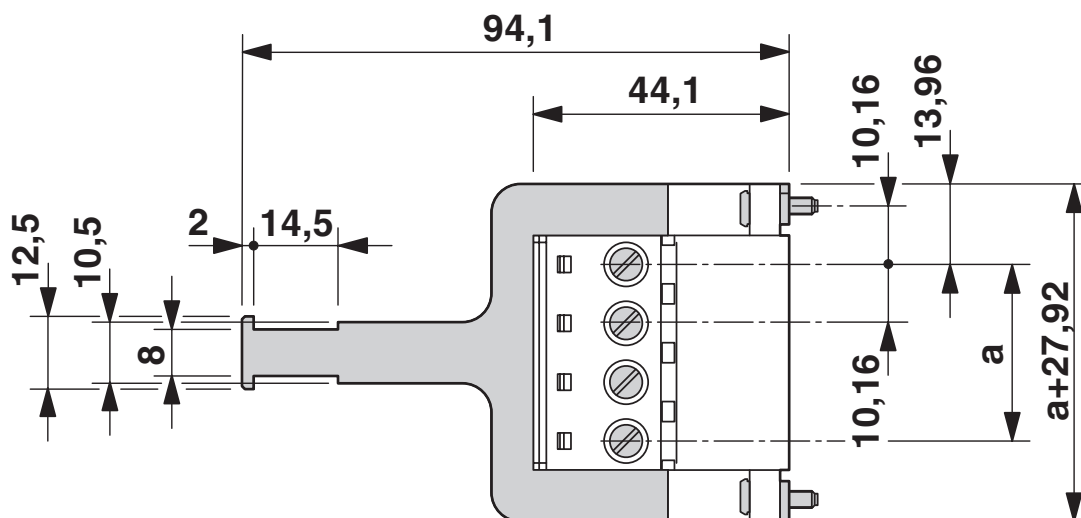
|                                                        |           |
|--------------------------------------------------------|-----------|
| minimum creepage distance (III/3)                      | 12.5 mm   |
| Rated insulation voltage (III/2)                       | 1250 V DC |
| Rated surge voltage (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)                        | 1500 V DC |
| Rated surge voltage (II/2)                             | 8 kV      |
| minimum clearance value - non-homogenous field (II/2)  | 8 mm      |
| minimum creepage distance (II/2)                       | 8 mm      |

## Packaging specifications

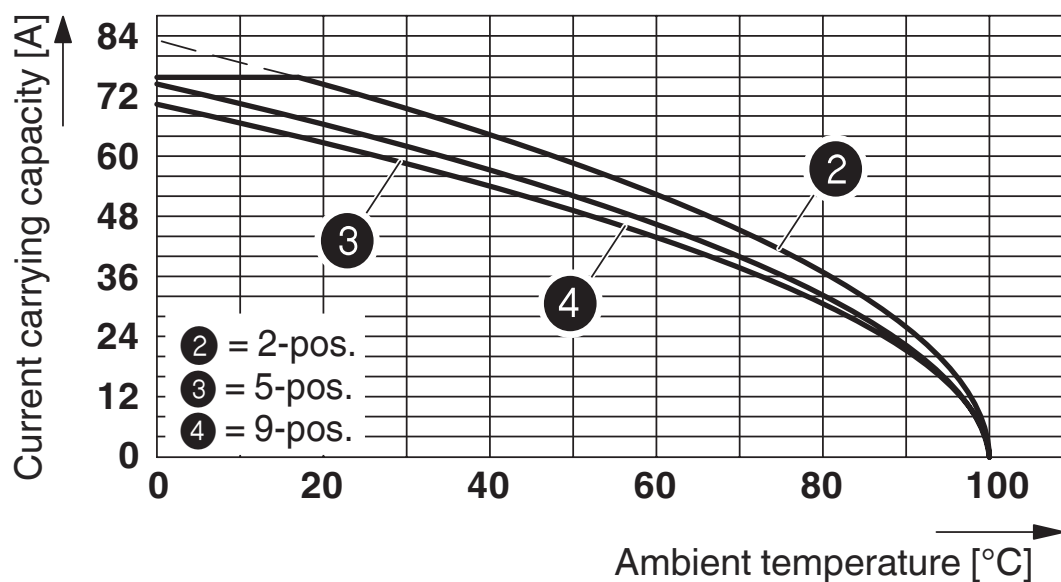
|                   |                     |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

## Drawings

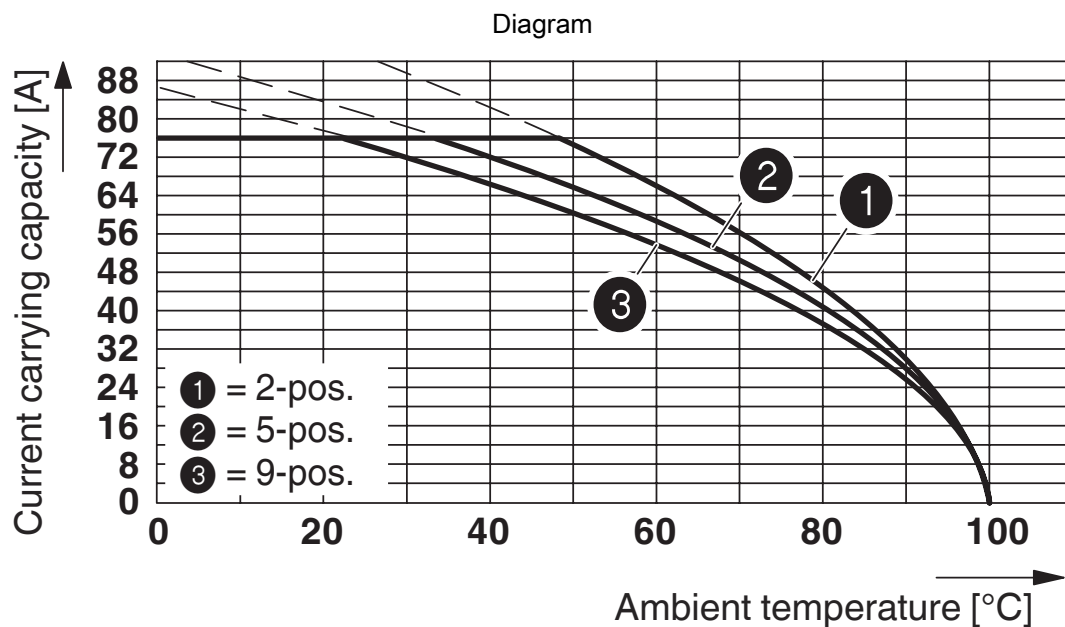
Dimensional drawing



Diagram



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



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

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1970346>

|  <b>cULus Recognized</b><br>Approval ID: E60425-20040202 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 600 V                 | 55 A                  | 20 - 6            | -                           |
| C                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 600 V                 | 55 A                  | 20 - 6            | -                           |

|  <b>VDE approval of drawings</b><br>Approval ID: 40055586 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                      |                       |                       |                   |                             |
|                                                                                                                                            | 1000 V                | 76 A                  | -                 | 0.75 - 16                   |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460202 |
| ECLASS-15.0 | 27460202 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002638 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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## Environmental product compliance

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| EU RoHS                                 |                                          |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                       |
| 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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 1.088 kg CO2e                            |

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