

# DFK-IPC 16/ 2-GF-SH-10,16 - Feed-through header



1702976

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

Feed-through header, 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: Socket, number of potentials: 2, number of rows: 1, number of positions: 2, number of connections: 2, product range: DFK-IPC 16/..-GF-SH, pitch: 10.16 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 4.1 mm, number of solder pins per potential: 3, plug-in system: COMBICON PC 16, Electrical properties: shielded, Pin connector pattern alignment: Standard, locking: Screw locking mechanism, mounting method: Threaded flange, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Flange system enables secure fixing to the housing panel by means of tool-free snap-in locking or screws
- Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections
- Shroud for professional EMC shield feed-through on the inside of the device
- Screwable flange for superior mechanical stability
- Integrated double steel spring provides additional safety in the event of temperature and power fluctuations

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1702976                        |
| Packing unit                         | 10 pc                          |
| Minimum order quantity               | 10 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA05                           |
| Product key                          | AAEWAC                         |
| GTIN                                 | 4046356031561                  |
| Weight per piece (including packing) | 24.36 g                        |
| Weight per piece (excluding packing) | 18.89 g                        |
| Customs tariff number                | 85366990                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                           |                        |
|---------------------------|------------------------|
| Product type              | Feed-through header    |
| Product family            | DFK-IPC 16/..-GF-SH    |
| Product line              | COMBICON Connectors XL |
| Type                      | Headers                |
| Number of positions       | 2                      |
| Pitch                     | 10.16 mm               |
| Number of connections     | 2                      |
| Number of rows            | 1                      |
| Number of potentials      | 2                      |
| Mounting type             | Threaded flange        |
| Pin layout                | Linear pinning         |
| Solder pins per potential | 3                      |
| Electrical characteristic | shielded               |

### Electrical properties

#### Properties

|                             |          |
|-----------------------------|----------|
| Nominal current $I_N$       | 76 A     |
| Nominal voltage $U_N$       | 1000 V   |
| Contact resistance          | 0.3 mΩ   |
| Rated voltage (III/3)       | 630 V    |
| Rated surge voltage (III/3) | 6 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 |

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

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## 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       |

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

## Dimensions

|                       |              |
|-----------------------|--------------|
| Dimensional drawing   |              |
| Pitch                 | 10.16 mm     |
| Width [w]             | 61.4 mm      |
| Height [h]            | 22 mm        |
| Length [l]            | 34.55 mm     |
| Installed height      | 19.9 mm      |
| Solder pin length [P] | 4.1 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 60512-1:2001-01 |
| Result        | Test passed         |

### Dimension check

|               |                     |
|---------------|---------------------|
| Specification | IEC 60512-1:2001-01 |
| Result        | Test passed         |

### Resistance of inscriptions

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|               |                        |
|---------------|------------------------|
| Specification | IEC 60068-2-70:1995-12 |
| Result        | Test passed            |

## Polarization and coding

|               |                                    |
|---------------|------------------------------------|
| Specification | IEC 60512-7:1993-08 (Polarization) |
| Result        | Test passed                        |

## Contact holder in insert

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

## Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 50          |
| Insertion strength per pos. approx. | 10 N        |
| Withdraw strength per pos. approx.  | 9 N         |

## Electrical tests

### Thermal test | Test group C

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

### Insulation resistance

|  |                     |
|--|---------------------|
| Specification                                | IEC 60512-2:1985-00 |
| Insulation resistance, neighboring positions | $10^{12} \Omega$    |

### 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)                       | 630 V             |
| Rated surge voltage (III/3)                            | 6 kV              |
| minimum clearance value - non-homogenous field (III/3) | 5.5 mm            |
| minimum creepage distance (III/3)                      | 8 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                   |

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|  |           |
|--|-----------|
| Comparative tracking index (IEC 60112)                 | CTI 600   |
| Rated insulation voltage (III/3)                       | 630 V     |
| Rated surge voltage (III/3)                            | 6 kV      |
| minimum clearance value - non-homogenous field (III/3) | 5.5 mm    |
| minimum creepage distance (III/3)                      | 8 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      |

## Environmental and real-life conditions

### Durability test

|  |                     |
|--|---------------------|
| Specification                          | IEC 60512-5:1992-08 |
| Impulse withstand voltage at sea level | 9.8 kV              |
| Contact resistance $R_1$               | 0.3 m $\Omega$      |
| Contact resistance $R_2$               | 0.4 m $\Omega$      |
| Insertion/withdrawal cycles            | 50                  |

### Climatic test

|                                   |                   |
|-----------------------------------|-------------------|
| Specification                     | ISO 6988:1985-02  |
| Corrosive stress                  | KFW 0.2 S/1 cycle |
| Thermal stress                    | 100 °C/168 h      |
| Power-frequency withstand voltage | 4.26 kV           |

### Vibration test

|                        |                             |
|------------------------|-----------------------------|
| Specification          | IEC 60068-2-6:1995-03       |
| Frequency              | 10 - 150 - 10 Hz            |
| Sweep speed            | 1 octave/min                |
| Amplitude              | 0.35 mm (10 Hz ... 60.1 Hz) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |
| Test directions        | X-, Y- and Z-axis           |

### Ambient conditions

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

### Ambient conditions

|                                 |   |
|---------------------------------|---|
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |
|---------------------------------|---|

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

# DFK-IPC 16/ 2-GF-SH-10,16 - Feed-through header

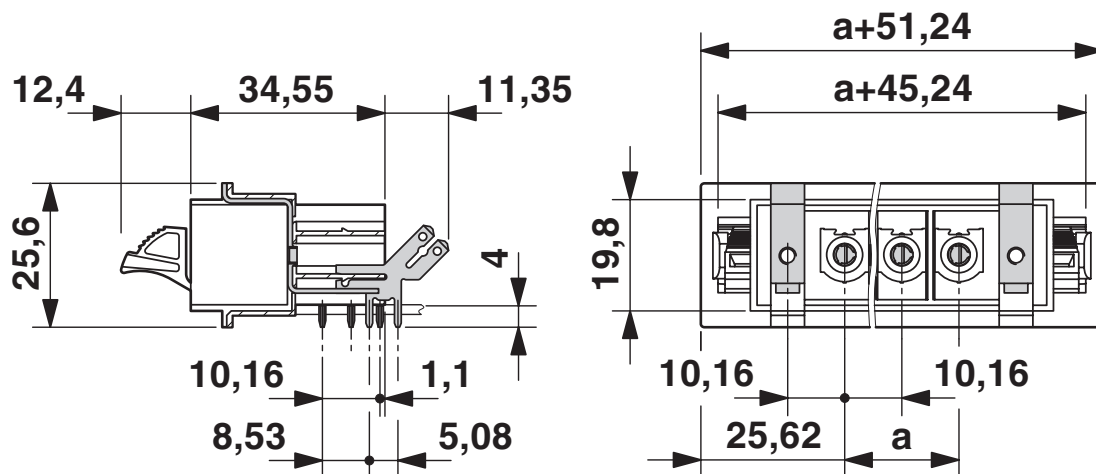


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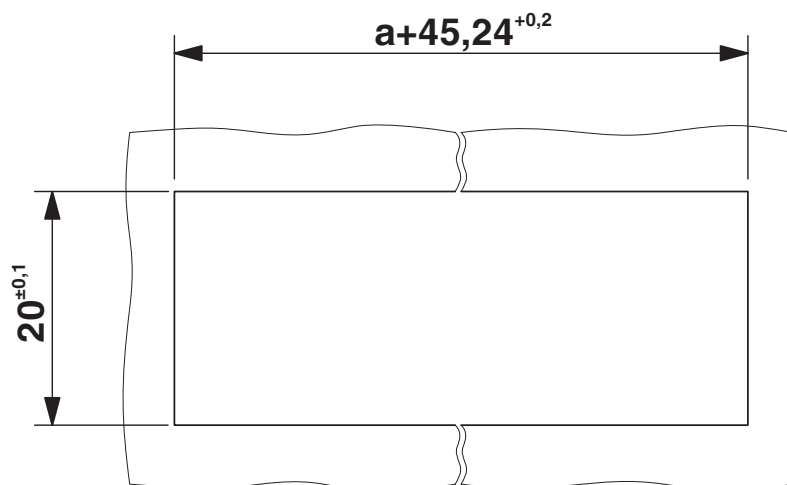
<https://www.phoenixcontact.com/us/products/1702976>

## Drawings

Dimensional drawing



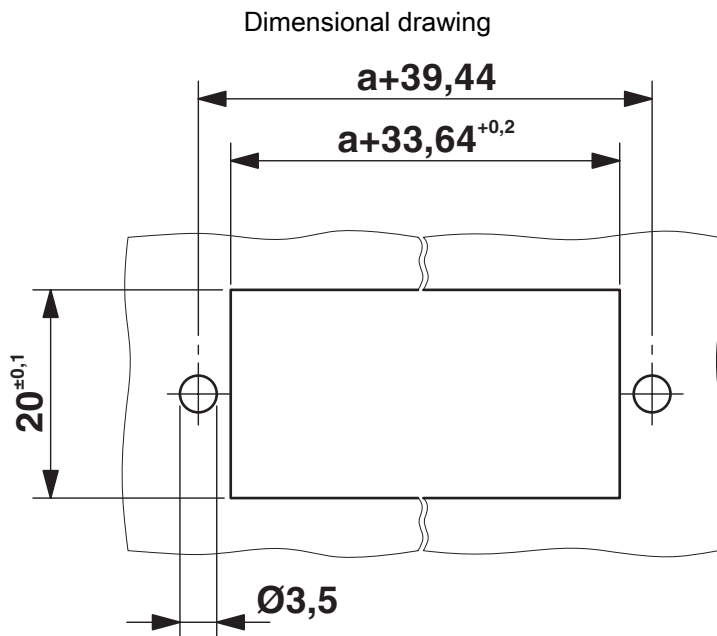
Dimensional drawing



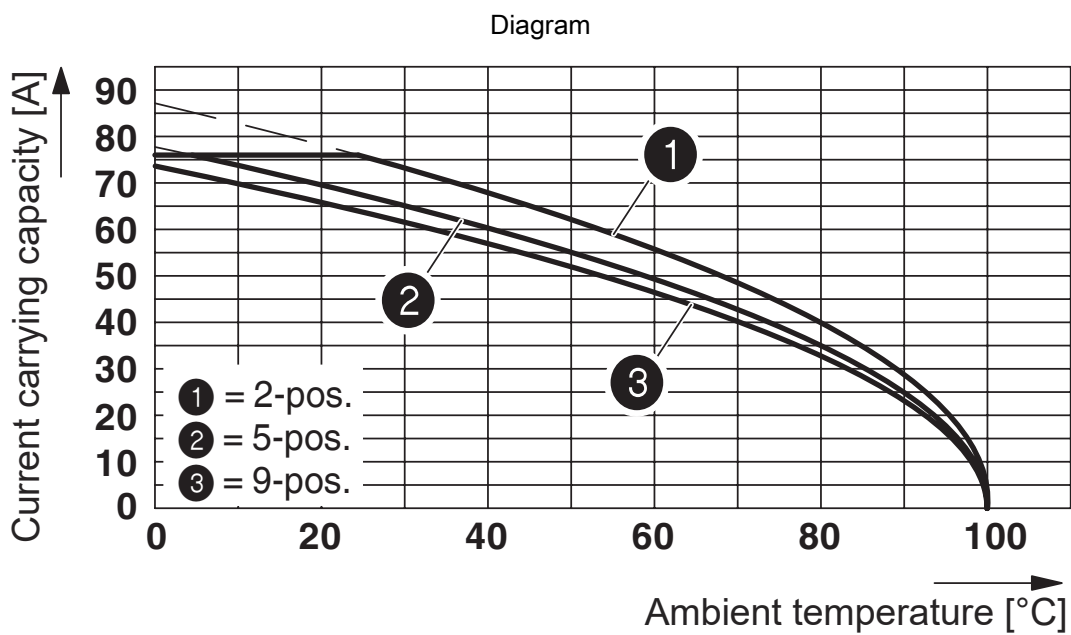
Sheet metal cutout for snap-on.

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Sheet metal cutout for screw connection.




Type: IPC 16/...-STF-SH-10,16 with DFK-IPC 16/...-GF-SH-10,16

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1702976>

|  <b>cULus Recognized</b><br>Approval ID: E60425-20040202 |                       |                       |                   |                      |
|---|-----------------------|-----------------------|-------------------|----------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| B   | 300 V                 | 55 A                  | -                 | -                    |
| C   | 300 V                 | 55 A                  | -                 | -                    |
| D   | 600 V                 | 5 A                   | -                 | -                    |

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

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002637 |
|-----------|----------|

### 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.356 kg CO2e |
|---------|---------------|

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