

# D31H 2,2/ 3-FH-3,81-X - PCB connector



1340385

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PCB connector, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of rows: 1, number of positions: 3, product range: D31H 2,2/..-FH, pitch: 3.81 mm, connection method: Crimp connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: CONNEXIS D, locking: Snap-in locking, mounting method: Engagement nose, type of packaging: packed in cardboard

## Your advantages

- Cost-effective connection of crimped conductors in large quantities
- Small component size for applications where space is at a premium
- Intuitive locking mechanism prevents accidental disconnection
- Tools for automatic crimping available as an option

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1340385                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA02                           |
| Product key                          | AABCUC                         |
| GTIN                                 | 4063151644680                  |
| Weight per piece (including packing) | 5.4 g                          |
| Weight per piece (excluding packing) | 5.047 g                        |
| Customs tariff number                | 85366990                       |
| Country of origin                    | CN                             |

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## Technical data

### Product properties

|                     |                       |
|---------------------|-----------------------|
| Product type        | PCB connector         |
| Product family      | D31H 2,2/...-FH       |
| Product line        | CONNEXIS Connectors S |
| Number of positions | 3                     |
| Pitch               | 3.81 mm               |
| Number of rows      | 1                     |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 8 A    |
| Nominal voltage $U_N$       | 160 V  |
| Contact resistance          | 5 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

#### Interlock

|               |                 |
|---------------|-----------------|
| Locking type  | Snap-in locking |
| Mounting type | Engagement nose |

#### Conductor connection

|                                    |                  |
|------------------------------------|------------------|
| Connection method                  | Crimp connection |
| Conductor/PCB connection direction | 0 °              |
| Conductor cross-section AWG        | 28 ... 14        |
| Stripping length                   | 4.5 mm           |

### Material specifications

#### Material data - contact

|  |          |
|--|----------|
| Metal surface contact area (top layer) | Tin (Sn) |
|--|----------|

#### Material data - housing

|  |                      |
|--|----------------------|
| Color (Housing)                        | black (9005)         |
| Insulating material                    | PBT                  |
| Insulating material group              | II                   |
| CTI according to IEC 60112             | $400 \leq CTI < 600$ |
| Flammability rating according to UL 94 | V0                   |

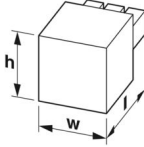
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## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Pitch               | 3.81 mm  |
| Width [w]           | 25.57 mm   |
| Height [h]          | 12.7 mm  |
| Length [l]          | 33.6 mm  |

## Notes

|                     |   |
|---------------------|---|
| Note on the contact | These connectors conform to DIN EN 61984, connectors without switching power (COC). When used for their intended purpose, they must not be plugged in or disconnected live or under load. |
| Note on application | All laboratory tests are performed in combination with the crimp contacts specified as accessories.   |
| Note on application | The current depends on the crimp contact and conductor cross-section used.  |
| Note on application | The corresponding crimp contacts are to be found in the "Accessories" tab.  |

## Mechanical tests

### Tensile strength of crimp connections

|   |                            |
|---|----------------------------|
| Result  | Test passed                |
| Conductor cross-section/conductor type/tractive force setpoint/actual value | AWG 28 / flexible / > 11 N |

### Insertion and withdrawal forces

|                                     |                        |
|-------------------------------------|------------------------|
| Specification                       | IEC 60512-13-2:2006-02 |
| Result                              | Test passed            |
| No. of cycles                       | 25                     |
| Insertion strength per pos. approx. | 6 N                    |
| Withdraw strength per pos. approx.  | 6 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           |

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## Dimension check

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

## 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)              |
| Acceleration           | 50 m/s <sup>2</sup> (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h                                    |
| Test directions        | X-, Y- and Z-axis                        |

### Durability test

|  |                       |
|--|-----------------------|
| Specification                          | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 2.95 kV               |
| Contact resistance R <sub>1</sub>      | 5 mΩ                  |
| Contact resistance R <sub>2</sub>      | 5 mΩ                  |
| Insertion/withdrawal cycles            | 25                    |

### 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                    | 105 °C/168 h  |
| Power-frequency withstand voltage | 1.39 kV   |

### Ambient conditions

|   |   |
|---|---|
| Ambient temperature (operation)         | -55 °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 | 10                    |

### 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 | II                  |

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|  |                           |
|--|---------------------------|
| Comparative tracking index (IEC 60112)                 | CTI $\geq 400$ to $< 600$ |
| Rated insulation voltage (III/3)                       | 160 V                     |
| Rated surge voltage (III/3)                            | 2.5 kV                    |
| minimum clearance value - non-homogenous field (III/3) | 1.5 mm                    |
| minimum creepage distance (III/3)                      | 2.2 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)                       | 2.2 mm                    |

## Packaging specifications

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

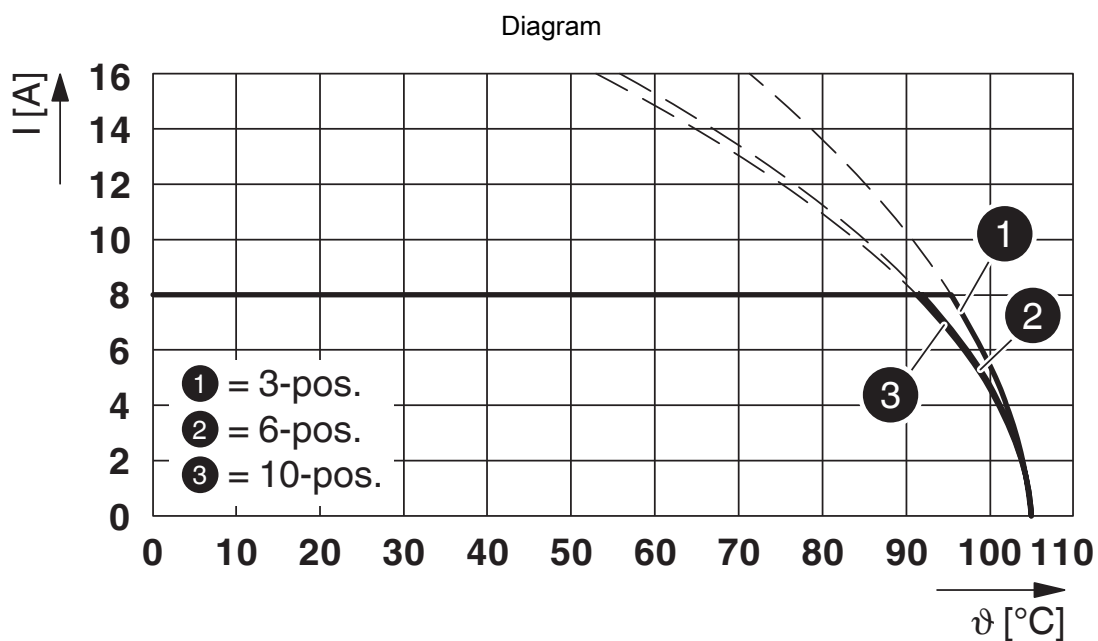
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## Drawings



Type: D31PC 2,2/...-3,81-X with D31H 2,2/...-FH-3,81-X

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1340385>

|  |                                |                                |                   |                               |
|--|--------------------------------|--------------------------------|-------------------|-------------------------------|
| <div><b>UL Recognized</b><br/>Approval ID: E118976-20240617</div> |                                |                                |                   |                               |
|  | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine  |                                |                                |                   |                               |
|  | 250 V                          | 12.25 A                        | 14                | -                             |

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## Classifications

### ECLASS

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

### ETIM

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



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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%               |

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