

# DD31H 2,2/20-PT-3,81-X - Feed-through plug



1340706

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Feed-through connector, color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of rows: 2, number of positions: 20, product range: DD31H 2,2/..-PT, pitch: 3.81 mm, connection method: Crimp connection, conductor/PCB connection direction: 0 °, pin layout: Linear pinning, locking clip: - without locking clip, plug-in system: CONNEXIS DD, Pin connector pattern alignment: Standard, 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
- Contacts arranged in a double row enable high packing density in a compact area
- Intuitive locking mechanism prevents accidental disconnection
- Tools for automatic crimping available as an option

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1340706                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AABCUG                         |
| Product key                          | AABCUG                         |
| GTIN                                 | 4063151647766                  |
| Weight per piece (including packing) | 13.728 g                       |
| Weight per piece (excluding packing) | 14.274 g                       |
| Customs tariff number                | 85366990                       |
| Country of origin                    | CN                             |

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## Technical data

### Product properties

|                     |                        |
|---------------------|------------------------|
| Product type        | Feed-through connector |
| Product family      | DD31H 2,2/...-PT       |
| Product line        | CONNEXIS Connectors S  |
| Number of positions | 20                     |
| Pitch               | 3.81 mm                |
| Number of rows      | 2                      |
| Pin layout          | Linear pinning         |

### 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 flange | Engagement nose |

#### Conductor connection

|                             |                  |
|-----------------------------|------------------|
| Connection method           | Crimp connection |
| Conductor cross section AWG | 28 ... 14        |
| Stripping length            | 4.5 mm           |

### Mounting

|            |                |
|------------|----------------|
| Pin layout | Linear pinning |
|------------|----------------|

### Material specifications

#### Material data - contact

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

#### Material data - housing

|                     |              |
|---------------------|--------------|
| Color (Housing)     | black (9005) |
| Insulating material | PBT          |

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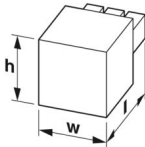
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|                                        |                             |
|----------------------------------------|-----------------------------|
| Insulating material group              | II                          |
| CTI according to IEC 60112             | $400 \leq \text{CTI} < 600$ |
| Flammability rating according to UL 94 | V0                          |

## Notes

|                     |                                                                                                                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note on the contact | These connectors conform to DIN EN 61984, connectors without switching capacity (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.                                                                                                                   |

## Dimensions

|                     |                                                                                     |
|---------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Pitch               | 3.81 mm                                                                             |
| Width [w]           | 67 mm                                                                               |
| Height [h]          | 17.78 mm                                                                            |
| Length [l]          | 33.6 mm                                                                             |

## 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

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 6 N         |
| Withdraw strength per pos. approx.  | 6 N         |

### Contact holder in insert

|                                             |                        |
|---------------------------------------------|------------------------|
| Specification                               | IEC 60512-15-1:2008-05 |
| Contact holder in insert Requirements >20 N | Test passed            |

### Resistance of inscriptions

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

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## 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           |

## Dimension check

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

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 20                    |

### 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                  |
| Comparative tracking index (IEC 60112)                 | CTI ≥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              |

## 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) |

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|                        |                                          |
|------------------------|------------------------------------------|
| 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                  |
| Contact resistance R <sub>2</sub> 2nd level | 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                                    |

## Packaging specifications

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

## Drawings



Type: DD31PC 2,2/...-3,81-X with DD31H 2,2/...-PT-3,81-X

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/1340706>

|                                                                                                                                           |                                |                                |                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|  <b>cULus Recognized</b><br>Approval ID: E60425-20240617 |                                |                                |                   |                               |
|                                                                                                                                           | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| Use group B                                                                                                                               |                                |                                |                   |                               |
| Factory wiring                                                                                                                            | 150 V                          | 8 A                            | 24 - 16           | -                             |

|                                                                                                                                         |                                |                                |                   |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|  <b>UL Recognized</b><br>Approval ID: E118976-20240617 |                                |                                |                   |                               |
|                                                                                                                                         | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
|                                                                                                                                         | 250 V                          | 8 A                            | 14                | -                             |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 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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