

# CDDC 1,5/10-PV-3,5 - Direct connector



1016521

<https://www.phoenixcontact.com/us/products/1016521>

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PCB direct plug, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, number of potentials: 20, number of rows: 2, number of positions: 10, number of connections: 20, product range: CDDC 1,5/..-PV, pitch: 3.5 mm, connection method: Crimp connection, mounting: SKEDD - Direct plug-in technology, conductor/PCB connection direction: 90 °, pin layout: Linear pinning, plug-in system: SKEDD, locking: Snap-in locking, mounting: Self-locking flange, type of packaging: packed in cardboard

## Your advantages

- SKEDD direct plug-in technology enables flexible positioning on the PCB
- Reduced component and process costs: simple insertion by hand and vibration-resistant connection
- Contacts arranged in a double row enable high packing density in a compact area
- Wide range of applications, thanks to suitability for PCBs with chemically tin-plated or Hot Air Leveling (HAL) surface
- Cost-effective connection of crimped conductors in large quantities
- Tools for manual and automatic crimping available as an option

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1016521       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA02          |
| Product key                          | AABDAA        |
| GTIN                                 | 4055626498171 |
| Weight per piece (including packing) | 4.82 g        |
| Weight per piece (excluding packing) | 3.99 g        |
| Customs tariff number                | 85472000      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product line          | COMBICON Connectors S |
| Product type          | PCB direct plug       |
| Product family        | CDDC 1,5/..-PV        |
| Number of positions   | 10                    |
| Pitch                 | 3.5 mm                |
| Number of connections | 20                    |
| Number of rows        | 2                     |
| Mounting flange       | Self-locking flange   |
| Number of potentials  | 20                    |
| Pin layout            | Linear pinning        |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 8 A    |
| Nominal voltage $U_N$       | 160 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 1.5 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

#### Connection technology

|                       |         |
|-----------------------|---------|
| Connector system      | SKEDD   |
| Nominal cross section | 1.5 mm² |

#### Interlock

|                 |                     |
|-----------------|---------------------|
| Locking type    | Snap-in locking     |
| Mounting flange | Self-locking flange |

#### Conductor connection

|  |                      |
|--|----------------------|
| Connection method  | Crimp connection     |
| Connection direction of the conductor to plug-in direction | 0 °                  |
| Conductor cross section flexible                           | 0.14 mm² ... 1.5 mm² |
| Conductor cross section AWG                                | 26 ... 16            |

### Mounting

|               |                                   |
|---------------|-----------------------------------|
| Mounting type | SKEDD - Direct plug-in technology |
| Pin layout    | Linear pinning                    |

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|                   |                  |
|-------------------|------------------|
| Connection method | Crimp connection |
|-------------------|------------------|

## Material specifications

### 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       |

### Material data – actuating element

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

|                     |  |
|---------------------|--|
| Note on the contact | The information on the basic material and the finish properties of the crimp contacts is to be found in the E-Shop in the technical data for the respective crimp contact. |
| 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.   |
| Note on application | The crimp contacts may only be processed with approved crimping tools.   |

## Dimensions

|                  |         |
|------------------|---------|
| Pitch            | 3.5 mm  |
| Width [w]        | 42.3 mm |
| Height [h]       | 19.6 mm |
| Length [l]       | 13 mm   |
| Installed height | 16 mm   |

### PCB design

|             |         |
|-------------|---------|
| Pin spacing | 7.00 mm |
|-------------|---------|

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## Mechanical tests

### Tensile strength of crimp connections

|   |  |
|---|--|
| Result  | Test passed                              |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.14 mm <sup>2</sup> / flexible / > 18 N |

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 4 N         |
| Withdraw strength per pos. approx.  | 3 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            |

### 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 | 16                    |

### 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              | I                   |
| Comparative tracking index (IEC 60112) | CTI 600             |

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|  |        |
|--|--------|
| 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 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)                       | 1.6 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)              |
| Sweep speed            | 50 m/s <sup>2</sup> (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h                                    |

### Durability test

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance R <sub>1</sub>            | 1.5 mΩ                |
| Contact resistance R <sub>2</sub>            | 1.6 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

### 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   |

### Shocks

|                 |                                   |
|-----------------|-----------------------------------|
| Specification   | IEC 60068-2-27:2008-02            |
| Pulse shape     | Semi-sinusoidal                   |
| Acceleration    | 300 m/s <sup>2</sup>              |
| Shock duration  | 18 ms                             |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

### Ambient conditions

|                                 |   |
|---------------------------------|---|
| Ambient temperature (operation) | -55 °C ... 105 °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 |
|-------------------|---------------------|

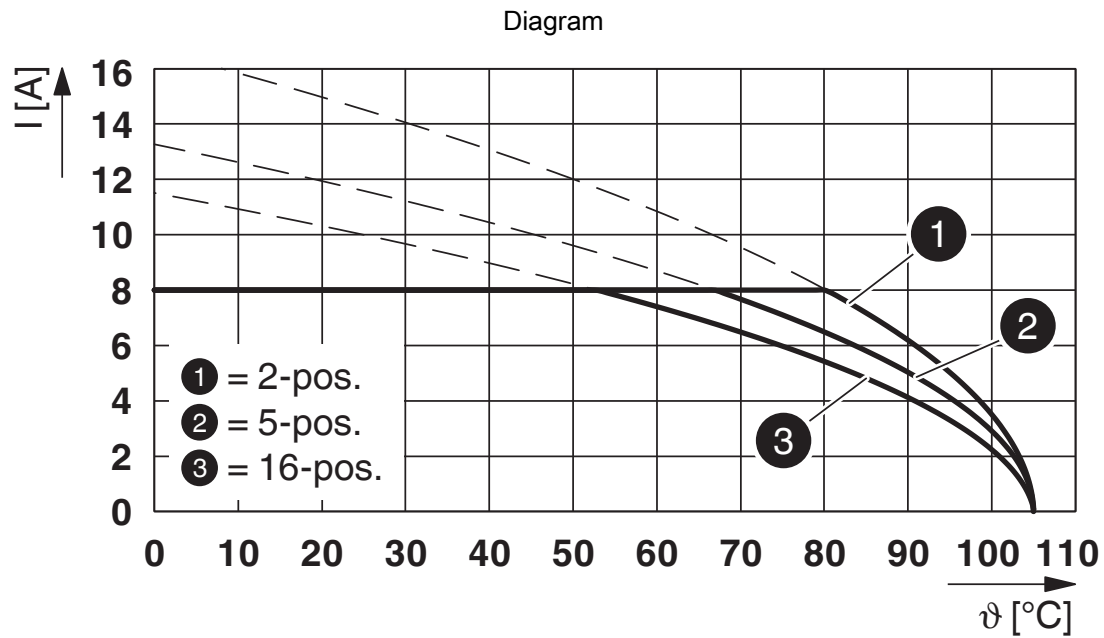
# CDDC 1,5/10-PV-3,5 - Direct connector



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## Drawings



Type: CDDC 1,5/...-PV-3,5

# CDDC 1,5/10-PV-3,5 - Direct connector





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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1016521>

|  <b>cULus Recognized</b><br>Approval ID: E60425-20160718 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B   | 150 V                 | 8 A                   | 26 - 16           | -                           |
| Use group D   | 300 V                 | 8 A                   | 26 - 16           | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40044617 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|  | 160 V                 | 8 A                   | -                 | 0.14 - 1.5                  |



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460202 |
| ECLASS-12.0 | 27460202 |
| ECLASS-13.0 | 27460202 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002638 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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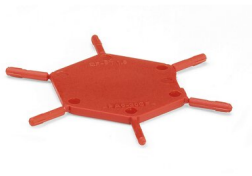
## Accessories

### CP-PT 1,5 - Coding profile

1985564

<https://www.phoenixcontact.com/us/products/1985564>

Coding profile, inserted into the hole on the plug, made from red insulating material, diameter: 1.35 mm



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### CDC-MP 0,14-0,5 - Crimp contact

1016664

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Crimp contact



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## CDC-MP 0,14-0,5-R - Crimp contact

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Crimp contact

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## CDC-MP 0,5-1,5 - Crimp contact

1016662

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Crimp contact

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## CDC-MP 0,5-1,5-R - Crimp contact

1016661

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Crimp contact

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