

# SDDC 1,5/ 6-PV-3,5 - Direct connector



1848684

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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: Sn, number of potentials: 12, number of rows: 2, number of positions: 6, number of connections: 12, product range: SDDC 1,5/..-PV, pitch: 3.5 mm, connection method: Push-in spring connection, mounting: SKEDD - Direct plug-in technology, conductor/PCB connection direction: 90 °, pin layout: Linear double pinning, plug-in system: SKEDD, locking: Snap-in locking, mounting method: Latching 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
- Time saving push-in connection, tools not required
- Intuitive operation due to color-coded actuating push button
- Quick and convenient testing using integrated test option

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1848684       |
| Packing unit                         | 100 pc        |
| Minimum order quantity               | 100 pc        |
| Sales key                            | AABDDA        |
| Product key                          | AABDDA        |
| GTIN                                 | 4055626307152 |
| Weight per piece (including packing) | 5.82 g        |
| Weight per piece (excluding packing) | 5.81 g        |
| Customs tariff number                | 85366990      |
| Country of origin                    | SK            |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product type          | PCB direct plug       |
| Product family        | SDDC 1,5/...-PV       |
| Product line          | COMBICON Connectors S |
| Number of positions   | 6                     |
| Pitch                 | 3.5 mm                |
| Number of connections | 12                    |
| Number of rows        | 2                     |
| Number of potentials  | 12                    |
| Pin layout            | Linear double pinning |

### Electrical properties

#### Properties

|                             |                |
|-----------------------------|----------------|
| Nominal current $I_N$       | 8 A            |
| Nominal voltage $U_N$       | 160 V          |
| Contact resistance          | 1.4 m $\Omega$ |
| 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)        | 400 V          |
| Rated surge voltage (II/2)  | 2.5 kV         |

### Connection data

#### Connection technology

|                       |                     |
|-----------------------|---------------------|
| Connector system      | SKEDD               |
| Nominal cross section | 1.5 mm <sup>2</sup> |

#### Interlock

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

#### Conductor connection

|   |   |
|---|---|
| Connection method   | Push-in spring connection                   |
| Connection direction of the conductor to plug-in direction            | 0 °   |
| Conductor cross-section rigid   | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section AWG   | 24 ... 16                                   |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>   |
| Cylindrical gauge a x b / diameter                                    | 2.4 mm x 1.5 mm / 1.6 mm                    |

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|                  |      |
|------------------|------|
| Stripping length | 8 mm |
|------------------|------|

## Specifications for ferrules without insulating collar

|  |  |
|--|--|
| recommended crimping tool                                    | 1212034 CRIMPFOX 6   |
| ferrules without insulating collar, according to DIN 46228-1 | Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm  |
|  | Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm |
|  | Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm    |
|  | Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm            |

## Specifications for ferrules with insulating collar

|   |  |
|---|--|
| recommended crimping tool                                 | 1212034 CRIMPFOX 6   |
| ferrules with insulating collar, according to DIN 46228-4 | Cross section: 0.25 mm <sup>2</sup> ; Length: 8 mm ... 10 mm |
|   | Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm  |
|   | Cross section: 0.75 mm <sup>2</sup> ; Length: 10 mm          |
|   | Cross section: 1 mm <sup>2</sup> ; Length: 10 mm             |

## Mounting

|               |                                   |
|---------------|-----------------------------------|
| Mounting type | SKEDD - Direct plug-in technology |
| Pin layout    | Linear double 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                  | hot-dip tin-plated   |
| Metal surface terminal point (top layer) | Tin (4 - 8 µm Sn)  |
| Metal surface contact area (top layer)   | Tin (4 - 8 µm Sn)  |

### 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                    | PBT |
| Insulating material group              | I   |
| CTI according to IEC 60112             | 600 |
| Flammability rating according to UL 94 | V0  |

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## 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               | 3.5 mm     |
| Width [w]           | 28.3 mm    |
| Height [h]          | 17.6 mm    |
| Length [l]          | 13.5 mm    |
| Installed height    | 14 mm      |
| Pin dimensions      | 0.9 x 2 mm |

## PCB design

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

## Mechanical tests

### Conductor connection

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Repeated connection and disconnection

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Pull-out test

|   |   |
|---|---|
| Specification   | IEC 60999-1:1999-11                     |
| Conductor cross-section/conductor type/tractive force setpoint/actual value | 0.2 mm <sup>2</sup> / solid / > 10 N    |
|   | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|   | 1.5 mm <sup>2</sup> / solid / > 40 N    |
|   | 1.5 mm <sup>2</sup> / flexible / > 40 N |

### Insertion and withdrawal forces

|        |             |
|--------|-------------|
| Result | Test passed |
|--------|-------------|

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|                                     |     |
|-------------------------------------|-----|
| No. of cycles                       | 25  |
| Insertion strength per pos. approx. | 8 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            |

## 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                |

### Temperature cycles

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Air clearances and creepage distances |

|  |                     |
|--|---------------------|
| Specification  | IEC 60664-1:2007-04 |
| Insulating material group                              | I                   |
| Comparative tracking index (IEC 60112)                 | CTI 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 mm                |
| Rated insulation voltage (III/2)                       | 160 V               |

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|  |        |
|--|--------|
| 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)                        | 400 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 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) |
| Acceleration           | 5g (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>            | 1.4 mΩ                |
| Contact resistance R <sub>2</sub>            | 1.5 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                    | 100 °C/168 h  |
| Power-frequency withstand voltage | 1.39 kV   |

### 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                                    |

## Packaging specifications

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

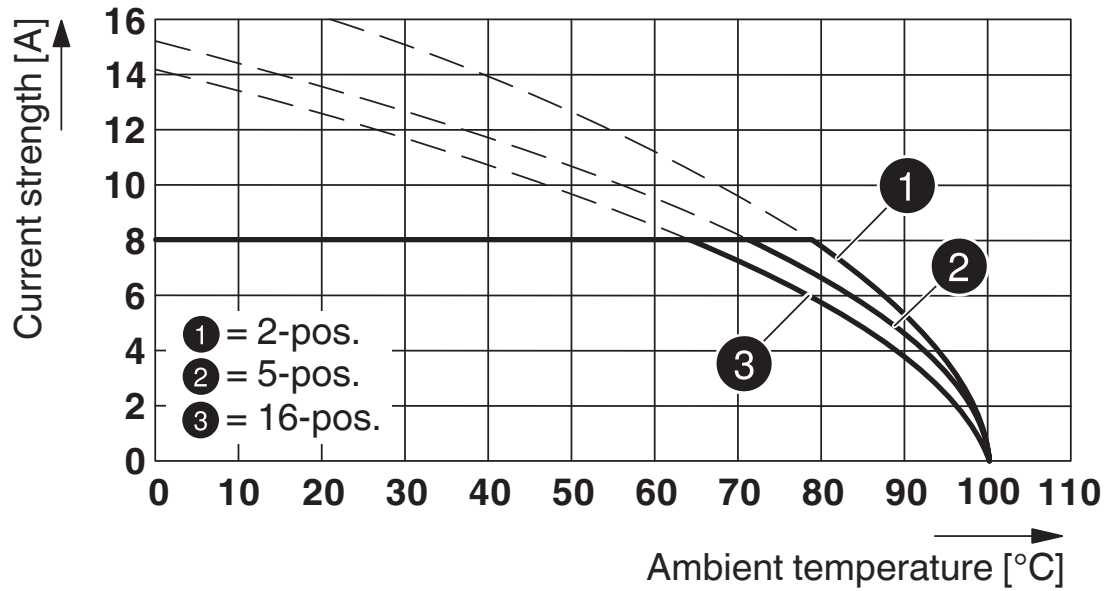
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## Drawings

Diagram



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

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/1848684>

|  <b>cULus Recognized</b><br>Approval ID: E60425-20160718 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   | 300 V                 | 8 A                   | 24 - 16           | -                           |
| D   | 300 V                 | 8 A                   | 24 - 16           | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40044617 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  | 160 V                 | 8 A                   | -                 | 0.2 - 1.5                   |

|  <b>UL Recognized</b><br>Approval ID: E60425-20160718 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| F  | 250 V                 | 8 A                   | 24 - 16           | -                           |

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.218 kg CO2e |
|---------|---------------|

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