

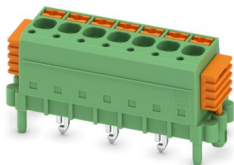
SDC 2,5/ 7-PV-5,0-ZB - Direct connector



1864082

<https://www.phoenixcontact.com/us/products/1864082>

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PCB direct plug, nominal cross section: 2.5 mm², color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Sn, number of potentials: 7, number of rows: 1, number of positions: 7, number of connections: 7, product range: SDC 2,5/..-PV, pitch: 5 mm, connection method: Push-in spring connection, mounting: SKEDD - Direct plug-in technology, conductor/PCB connection direction: 90 °, pin layout: Zigzag pinning W, solder pin [P]: 5 mm, 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
- 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 | 1864082 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA03 |
| Product key | AACDBA |
| GTIN | 4055626210384 |
| Weight per piece (including packing) | 9.116 g |
| Weight per piece (excluding packing) | 8.412 g |
| Customs tariff number | 85366990 |
| Country of origin | SK |

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Technical data

Product properties

| | |
|-----------------------|-----------------------|
| Product type | PCB direct plug |
| Product family | SDC 2,5/...-PV |
| Product line | COMBICON Connectors M |
| Number of positions | 7 |
| Pitch | 5 mm |
| Number of connections | 7 |
| Number of rows | 1 |
| Number of potentials | 7 |
| Pin layout | Zigzag pinning W |

Electrical properties

Properties

| | |
|-----------------------------|----------------|
| Nominal current I_N | 12 A |
| Nominal voltage U_N | 320 V |
| Contact resistance | 1.1 m Ω |
| Rated voltage (III/3) | 200 V |
| Rated surge voltage (III/3) | 4 kV |
| Rated voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| Rated voltage (II/2) | 320 V |
| Rated surge voltage (II/2) | 4 kV |

Connection data

Connection technology

| | |
|-----------------------|---------------------|
| Connector system | SKEDD |
| Nominal cross section | 2.5 mm ² |

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 ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 12 |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 1.5 mm / 2.4 mm |

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| | |
|------------------|-------|
| Stripping length | 10 mm |
|------------------|-------|

Conductor connection

| | |
|-------------------|---------------------------|
| Connection method | Push-in spring connection |
| Stripping length | 10 mm |

Specifications for ferrules without insulating collar

| | |
|--|---|
| recommended crimping tool | 1212045 CRIMPFOX 10S |
| ferrules without insulating collar, according to DIN 46228-1 | Cross section: 0.25 mm ² ; Length: 7 mm |
| | Cross section: 0.34 mm ² ; Length: 7 mm |
| | Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 0.75 mm ² ; Length: 10 mm |
| | Cross section: 1 mm ² ; Length: 10 mm |
| | Cross section: 2.5 mm ² ; Length: 10 mm |

Specifications for ferrules with insulating collar

| | |
|---|--|
| recommended crimping tool | 1212045 CRIMPFOX 10S |
| ferrules with insulating collar, according to DIN 46228-4 | Cross section: 0.25 mm ² ; Length: 8 mm |
| | Cross section: 0.34 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 0.75 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 1 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 1.5 mm ² ; Length: 8 mm ... 10 mm |
| | Cross section: 2.5 mm ² ; Length: 10 mm |

Mounting

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

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 | Tin-plated |
| Metal surface terminal point (top layer) | Tin (4 µm - 8 µm Sn) |
| Metal surface terminal point (middle layer) | Nickel (1.5 µm - 4 µm Ni) |
| Metal surface contact area (top layer) | Tin (4 µm - 8 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1.5 µm - 4 µm Ni) |

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 |

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

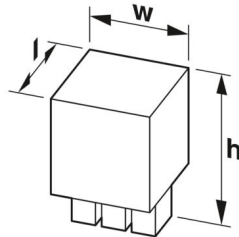
Material data – actuating element

| | |
|--|------|
| Insulating material | PBT |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 275 |
| Flammability rating according to UL 94 | V0 |

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 | 5 mm |
| Width [w] | 43.18 mm |
| Height [h] | 21.2 mm |
| Length [l] | 15.3 mm |
| Installed height | 16.2 mm |
| Solder pin length [P] | 5 mm |

PCB design

| | |
|---------------|----------|
| Pin spacing | 10.00 mm |
| Hole diameter | 2.4 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

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| | |
|---------------|---------------------|
| 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 ² / solid / > 10 N |
| | 0.2 mm ² / flexible / > 10 N |
| | 2.5 mm ² / solid / > 50 N |
| | 2.5 mm ² / flexible / > 50 N |

Insertion and withdrawal forces

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

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| Result | Test passed |
|--|---------------------|
| Air clearances and creepage distances | |
| Specification | IEC 60664-1:2007-04 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 275 |
| Rated insulation voltage (III/3) | 200 V |
| Rated surge voltage (III/3) | 4 kV |
| minimum clearance value - non-homogenous field (III/3) | 3 mm |
| minimum creepage distance (III/3) | 3.2 mm |
| Rated insulation voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| minimum clearance value - non-homogenous field (III/2) | 3 mm |
| minimum creepage distance (III/2) | 3.2 mm |
| Rated insulation voltage (II/2) | 320 V |
| Rated surge voltage (II/2) | 4 kV |
| minimum clearance value - non-homogenous field (II/2) | 3 mm |
| minimum creepage distance (II/2) | 3.2 mm |

Environmental and real-life conditions

Durability test

| | |
|--|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 4.8 kV |
| Contact resistance R_1 | 1.1 m Ω |
| Contact resistance R_2 | 1.1 m Ω |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 M Ω |

Climatic test

| | |
|-----------------------------------|---|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle |
| Thermal stress | 100 °C/168 h |
| Power-frequency withstand voltage | 2.21 kV |

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 |

Shocks

| | |
|---------------|------------------------|
| Specification | IEC 60068-2-27:2008-02 |
|---------------|------------------------|

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| | |
|-----------------|-----------------------------------|
| Pulse shape | Semi-sinusoidal |
| Acceleration | 30g |
| Shock duration | 18 ms |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

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) |
| 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

Dimensional drawing



Diagram



Type: SDC 2,5/...-PV-5,0-ZB

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Drilling plan/solder pad geometry



Size of the PCB: 1.6 mm

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1864082>

|  cULus Recognized Approval ID: E60425-20160718 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | 300 V | 12 A | 24 - 12 | - |
| D | 300 V | 10 A | 24 - 12 | - |

|  VDE Zeichengenehmigung Approval ID: 40044617 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | 320 V | 12 A | - | 0.2 - 2.5 |

|  UL Recognized Approval ID: E60425-20160718 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| F | 250 V | 12 A | 24 - 12 | - |

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Classifications

ECLASS

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

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002638 |
|-----------|----------|

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 | 0.211 kg CO2e |
|---------|---------------|

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