

ZEC 1,0/ 3-ST-3,5 C1 R1,3 - Printed-circuit board connector



1893698

<https://www.phoenixcontact.com/in/products/1893698>

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PCB direct plug, nominal cross section: 1 mm², color: green, nominal current: 8 A, rated voltage (III/2): 200 V, contact surface: Tin, type of contact: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: ZEC 1,0/...-ST, pitch: 3.5 mm, connection method: Spring-cage connection, mounting: Direct plug-in method, conductor/PCB connection direction: 0 °, plug-in system: ZEC, locking: Snap-in locking, mounting: Self-locking flange, type of packaging: packed in cardboard

Your advantages

- Defined contact force ensures that contact remains stable over the long term
- Inexpensive direct plug-in connection with just one component
- Clamping space opened by means of fixed screwdriver enables convenient conductor connection
- Plug-in direction parallel to the PCB

Commercial Data

| | |
|--------------------------------------|---------------------|
| Item number | 1893698 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales Key | AAB |
| Product Key | AABEAA |
| Catalog Page | Page 365 (C-1-2013) |
| GTIN | 4017918161248 |
| Weight per Piece (including packing) | 4.15 g |
| Weight per Piece (excluding packing) | 3.841 g |
| Customs tariff number | 85366930 |
| Country of origin | GR |

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Technical Data

Product properties

| | |
|-----------------------|-----------------------|
| Type | Direct plug connector |
| Product line | COMBICON Connectors S |
| Product type | PCB direct plug |
| Product family | ZEC 1,0/...-ST |
| Number of positions | 3 |
| Pitch | 3.5 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Mounting flange | without |
| Number of potentials | 3 |

Electrical properties

| | |
|-----------------------------|----------------|
| Nominal current I_N | 8 A |
| Nominal voltage U_N | 200 V |
| Degree of pollution | 3 |
| Contact resistance | 1.3 m Ω |
| Rated voltage (III/3) | 160 V |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2) | 200 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

| | |
|-----------------------|-----------------------|
| Type | Direct plug connector |
| Connector system | ZEC |
| Nominal cross section | 1 mm ² |
| Type of contact | Socket |

Interlock

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

Conductor connection

| | |
|--|--|
| Connection method | Spring-cage connection |
| Connection direction of the conductor to plug-in direction | 0 ° |
| Conductor cross section rigid | 0.2 mm ² ... 1 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 1 mm ² |
| Conductor cross section AWG | 24 ... 16 |
| Conductor cross section flexible, with ferrule without plastic | 0.25 mm ² ... 1 mm ² |

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| | |
|---|---|
| sleeve | |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 0.75 mm ² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm ² ... 0.5 mm ² |
| Stripping length | 7 mm |

Mounting

| | |
|---------------|-----------------------|
| Mounting type | Direct plug-in method |
|---------------|-----------------------|

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 |

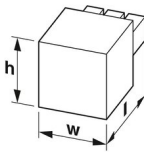
Material data – actuating element

| | |
|-----------|-----|
| Color () | () |
|-----------|-----|

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] | 11.9 mm |

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| | |
|------------------|----------|
| Height [h] | 17.5 mm |
| Length [l] | 24.05 mm |
| Installed height | 17.5 mm |

Mechanical tests

Test for conductor damage and slackening

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1990-05 |
| Result | Test passed |

Repeated connection and disconnection

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1990-05 |
| Result | Test passed |

Pull-out test

| | |
|---|---|
| Specification | IEC 60999-1:1990-05 |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.2 mm ² / solid / > 10 N |
| | 0.2 mm ² / flexible / > 10 N |
| | 1 mm ² / solid / > 35 N |
| | 1 mm ² / flexible / > 35 N |

Insertion and withdrawal forces

| | |
|-------------------------------------|-------------|
| Result | Test passed |
| No. of cycles | 20 |
| Insertion strength per pos. approx. | 5 N |
| Withdraw strength per pos. approx. | 3 N |

Resistance of inscriptions

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

Visual inspection

| | |
|---------------|---------------------|
| Specification | IEC 60512-2:1985-00 |
| Result | Test passed |

Dimension check

| | |
|---------------|---------------------|
| Specification | IEC 60512-2:1985-00 |
| Result | Test passed |

Electrical tests

Thermal test | Test group C

| | |
|----------------------------|-----------------------|
| Specification | IEC 60512-5-1:2002-02 |
| Tested number of positions | 12 |

Insulation resistance

| | |
|--|---------------------|
| Specification | IEC 60512-2:1985-00 |
| Insulation resistance, neighboring positions | 10 ¹¹ Ω |

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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) | 200 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 60068-2-6:1995-03 |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 Hz ... 60.1 Hz) |
| Sweep speed | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |

Durability test

| | |
|-----------------------------------|---------------------|
| Specification | IEC 60512-5:1992-08 |
| Contact resistance R ₁ | 1.3 mΩ |
| Contact resistance R ₂ | 2 mΩ |
| Insertion/withdrawal cycles | 20 |

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 | 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

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

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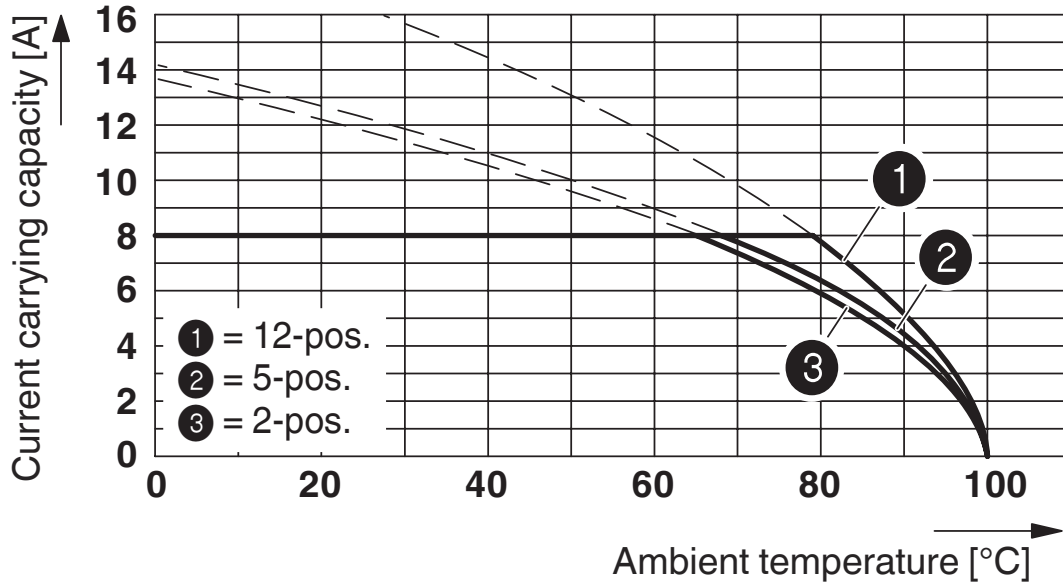


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Drawings

Diagram



Type: ZEC 1,0/...-ST-3,5

Derating curve, determined as per DIN EN 61984 (VDE 0627):2002-09

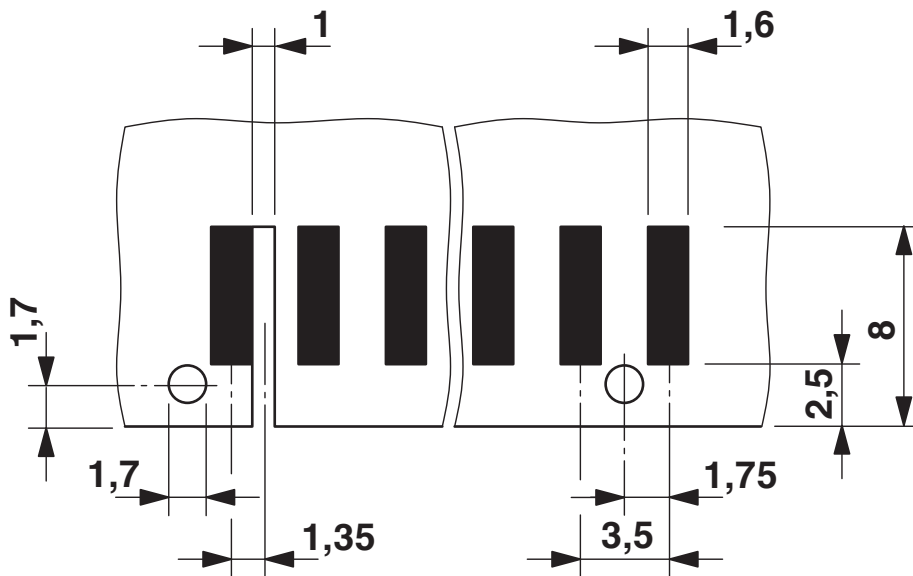
Representation based on DIN EN 60512-5-2:2003-01

Connected conductor cross section = 1 mm²

Reduction factor = 0.8

Number of positions = see diagram

Drilling plan/solder pad geometry



Size of the PCB: 1.6 ± 0.2 mm

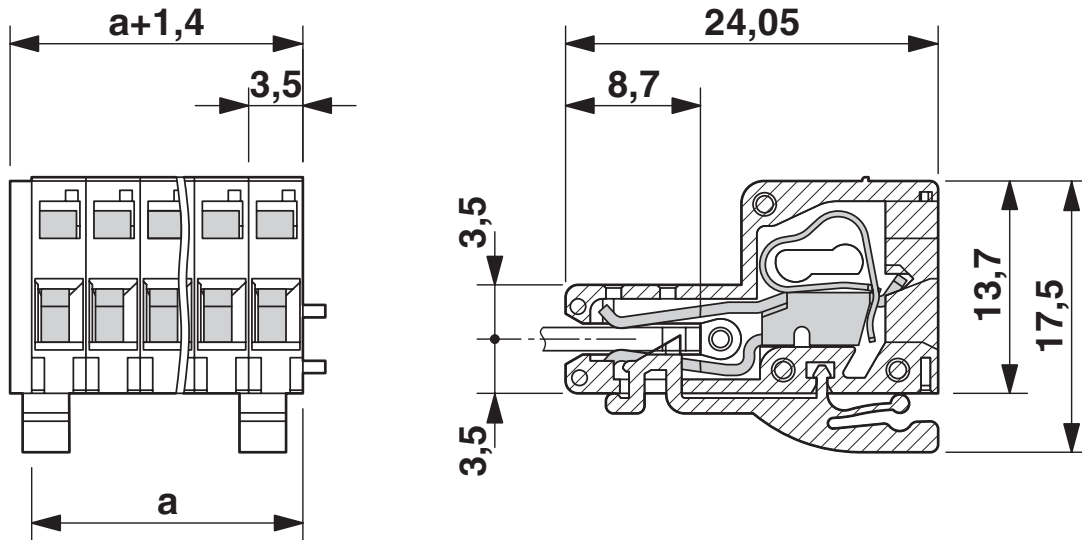
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Dimensional drawing



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Approvals

|  IECEE CB Scheme Approval ID: DE1-51128 | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | 1000 V | 10 A | - | - |

|  EAC Approval ID: B.01687 |
|--|
|--|

|  cULus Recognized Approval ID: E60425-19941110 | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | 150 V | 8 A | 26 - 16 | - |

|  VDE Gutachten mit Fertigungsüberwachung Approval ID: 40020343 | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | 160 V | 8 A | - | 0.2 - 1 |

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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

SZF 0-0,4X2,5 - Screwdriver

1204504

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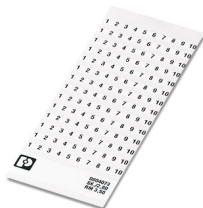


Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.4 x 2.5 x 75 mm, 2-component grip, with non-slip grip

SK 3,5/2,8:FORTL.ZAHLEN - Marker card

0804073

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Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 99, mounting type: adhesive, for terminal block width: 3.5 mm, lettering field size: 3.5 x 2.8 mm

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