

# SPC 4/ 5-ST-6,35 - PCB connector

1232903

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PCB connector, nominal cross section: 4 mm<sup>2</sup>, color: black, nominal current: 24 A, rated voltage (III/2): 1000 V, contact surface: Sn, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: SPC 4/..-ST, pitch: 6.35 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON PC 4, locking: without, mounting method: without, type of packaging: packed in cardboard

## Your advantages

- 600 V UL approval in the smallest of dimensions
- Increased touch protection in accordance with IEC/UL 61800-5-1
- Time saving push-in connection, tools not required
- Optimized for tight installation situations: operation and conductor connection from one direction
- Defined contact force ensures that contact remains stable over the long term

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1232903       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA04          |
| Product key                          | AADFAA        |
| GTIN                                 | 4063151334765 |
| Weight per piece (including packing) | 18 g          |
| Weight per piece (excluding packing) | 2.22 g        |
| Customs tariff number                | 85366990      |
| Country of origin                    | CN            |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product type          | PCB connector         |
| Product family        | SPC 4/..-ST           |
| Product line          | COMBICON Connectors L |
| Number of positions   | 5                     |
| Pitch                 | 6.35 mm               |
| Number of connections | 5                     |
| Number of rows        | 1                     |
| Number of potentials  | 5                     |

### Electrical properties

#### Properties

|                             |         |
|-----------------------------|---------|
| Nominal current $I_N$       | 24 A    |
| Nominal voltage $U_N$       | 1000 V  |
| Contact resistance          | 0.81 mΩ |
| Rated voltage (III/3)       | 1000 V  |
| Rated surge voltage (III/3) | 8 kV    |
| Rated voltage (III/2)       | 1000 V  |
| Rated surge voltage (III/2) | 8 kV    |
| Rated voltage (II/2)        | 1000 V  |
| Rated surge voltage (II/2)  | 6 kV    |

### Connection data

#### Connection technology

|                         |                   |
|-------------------------|-------------------|
| Connector system        | COMBICON PC 4     |
| Nominal cross section   | 4 mm <sup>2</sup> |
| Contact connection type | Socket            |

#### Interlock

|               |         |
|---------------|---------|
| Locking type  | without |
| Mounting type | without |

#### Conductor connection

|   |  |
|---|--|
| Connection method   | Push-in spring connection                  |
| Conductor/PCB connection direction                                      | 0 °  |
| Conductor cross-section rigid   | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>  |
| Conductor cross-section flexible  | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>  |
| Conductor cross-section AWG   | 24 ... 10                                  |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve    | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Cylindrical gauge a x b / diameter                                      | 3.6 mm x 3.1 mm / 3.0 mm                   |

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|                  |                 |
|------------------|-----------------|
| Stripping length | 10 mm ... 12 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: 10 mm           |
|  | Cross section: 0.75 mm <sup>2</sup> ; Length: 10 mm          |
|  | Cross section: 1 mm <sup>2</sup> ; Length: 10 mm             |
|  | Cross section: 1.5 mm <sup>2</sup> ; Length: 10 mm ... 12 mm |
|  | Cross section: 2.5 mm <sup>2</sup> ; Length: 12 mm           |
|  | Cross section: 4 mm <sup>2</sup> ; Length: 12 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: 10 mm ... 12 mm |
|   | Cross section: 0.34 mm <sup>2</sup> ; Length: 10 mm ... 12 mm |
|   | Cross section: 0.5 mm <sup>2</sup> ; Length: 10 mm ... 12 mm  |
|   | Cross section: 0.75 mm <sup>2</sup> ; Length: 10 mm ... 12 mm |
|   | Cross section: 1 mm <sup>2</sup> ; Length: 10 mm ... 12 mm    |
|   | Cross section: 1.5 mm <sup>2</sup> ; Length: 10 mm ... 12 mm  |
|   | Cross section: 2.5 mm <sup>2</sup> ; Length: 10 mm ... 12 mm  |
|   | Cross section: 4 mm <sup>2</sup> ; Length: 10 mm ... 12 mm    |

## 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 µm - 8 µm Sn)   |
| Metal surface contact area (top layer)   | Tin (4 µm - 8 µm Sn)   |

### Material data - housing

|   |              |
|---|--------------|
| Color (Housing)   | black (9005) |
| 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 | 300 °C       |

### Material data – actuating element

|                           |               |
|---------------------------|---------------|
| Color (Actuating element) | orange (2003) |
| Insulating material       | PA            |

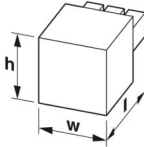
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|  |     |
|--|-----|
| Insulating material group              | I   |
| CTI according to IEC 60112             | 600 |
| Flammability rating according to UL 94 | V0  |

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Pitch               | 6.35 mm  |
| Width [w]           | 32.95 mm   |
| Height [h]          | 16.6 mm  |
| Length [l]          | 36.85 mm   |

## 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. |
|--------------------|--|

## 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 |
|   | 4 mm <sup>2</sup> / solid / > 60 N      |
|   | 4 mm <sup>2</sup> / flexible / > 60 N   |

### Insertion and withdrawal forces

|                                     |                        |
|-------------------------------------|------------------------|
| Specification                       | IEC 60512-13-2:2006-02 |
| Result                              | Test passed            |
| No. of cycles                       | 25                     |
| Insertion strength per pos. approx. | 8 N                    |

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|                                    |                        |
|------------------------------------|------------------------|
| Withdraw strength per pos. approx. | 6 N                    |
| 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            |

## Environmental and real-life conditions

### Durability test

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 9.8 kV                |
| Contact resistance $R_1$                     | 0.81 m $\Omega$       |
| Contact resistance $R_2$                     | 0.95 m $\Omega$       |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 M $\Omega$        |

### Climatic test

|                                   |   |
|-----------------------------------|---|
| Specification                     | EN ISO 22479:2022-06  |
| 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 | 4.26 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           | 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                        |

### 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 ... 105 °C (dependent on the derating curve) |

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## Electrical tests

### Thermal test | Test group C

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

### 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 | 1. Insulation coordination

|  |                   |
|--|-------------------|
| Specification  | IEC 61984:2008-10 |
| Insulating material group                              | I                 |
| Comparative tracking index (IEC 60112)                 | CTI 600           |
| Rated insulation voltage (III/3)                       | 1000 V            |
| Rated surge voltage (III/3)                            | 8 kV              |
| minimum clearance value - non-homogenous field (III/3) | 8 mm              |
| minimum creepage distance (III/3)                      | 12.5 mm           |
| Rated insulation voltage (III/2)                       | 1000 V            |
| Rated surge voltage (III/2)                            | 8 kV              |
| minimum clearance value - non-homogenous field (III/2) | 8 mm              |
| minimum creepage distance (III/2)                      | 8 mm              |
| Rated insulation voltage (II/2)                        | 1000 V            |
| Rated surge voltage (II/2)                             | 6 kV              |
| minimum clearance value - non-homogenous field (II/2)  | 5.5 mm            |
| minimum creepage distance (II/2)                       | 5.5 mm            |

### Air clearances and creepage distances | 2. Insulation coordination

|  |                     |
|--|---------------------|
| Specification  | IEC 60664-1:2020-05 |
| Insulating material group                              | I                   |
| Comparative tracking index (IEC 60112)                 | CTI 600             |
| Rated insulation voltage (III/3)                       | 1000 V AC/DC        |
| Rated surge voltage (III/3)                            | 8 kV                |
| minimum clearance value - non-homogenous field (III/3) | 8 mm                |
| minimum creepage distance (III/3)                      | 12.5 mm             |
| Rated insulation voltage (III/2)                       | 1250 V DC           |
| Rated surge voltage (III/2)                            | 8 kV                |
| minimum clearance value - non-homogenous field (III/2) | 8 mm                |
| minimum creepage distance (III/2)                      | 8 mm                |
| Rated insulation voltage (II/2)                        | 1500 V DC           |
| Rated surge voltage (II/2)                             | 8 kV                |

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|   |      |
|---|------|
| minimum clearance value - non-homogenous field (I1/2) | 8 mm |
| minimum creepage distance (I1/2)                      | 8 mm |

## Packaging specifications

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

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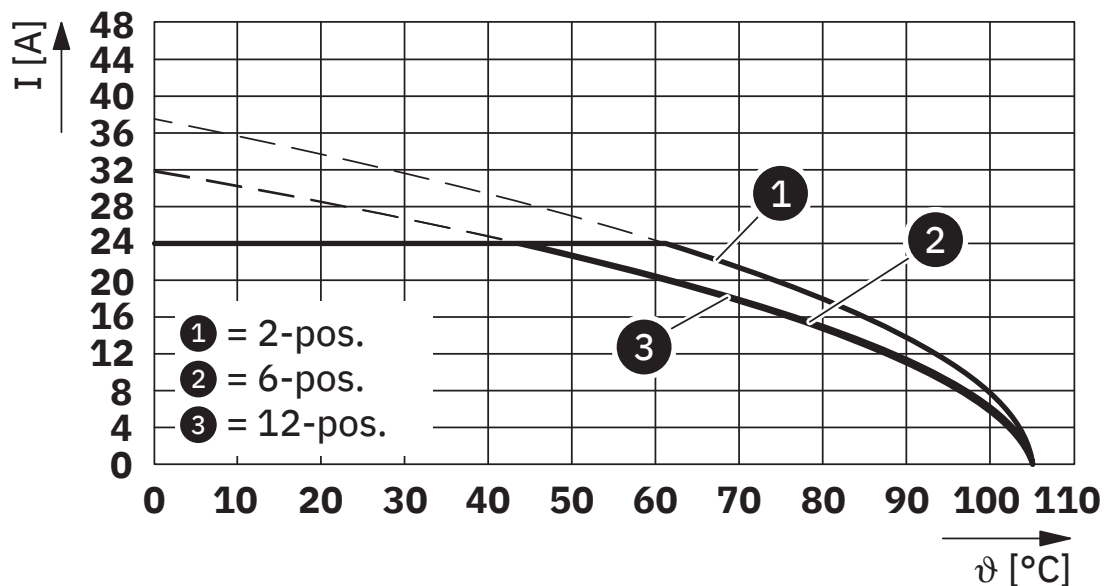


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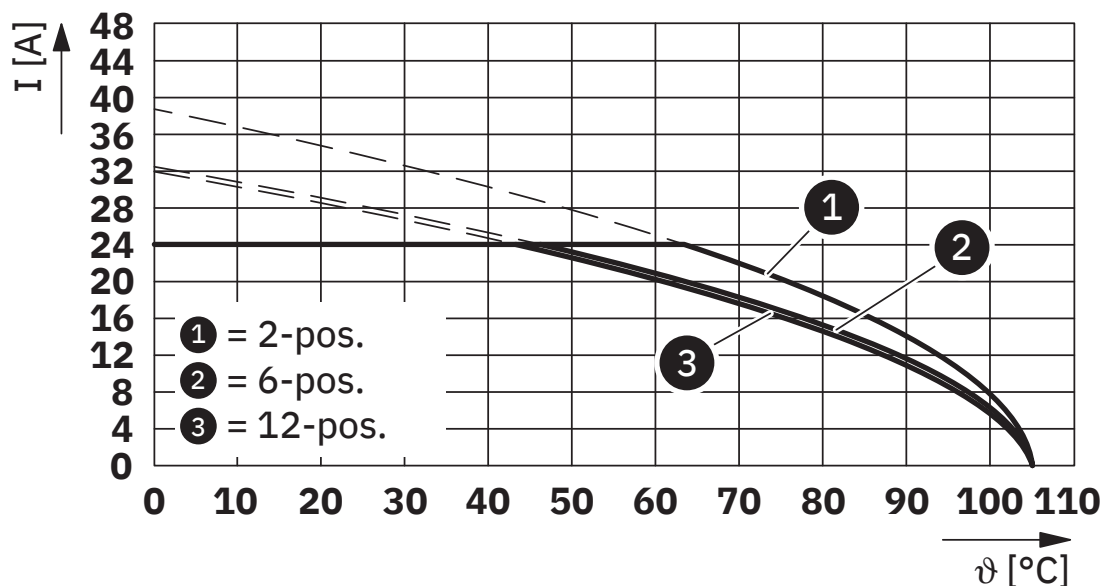
## Drawings

Diagram



Type: SPC 4/...-ST-6,35 with PC 4/...-G-6,35 P... THR

Diagram



Type: SPC 4/...-ST-6,35 with PCV 4/...-G-6,35 P... THR

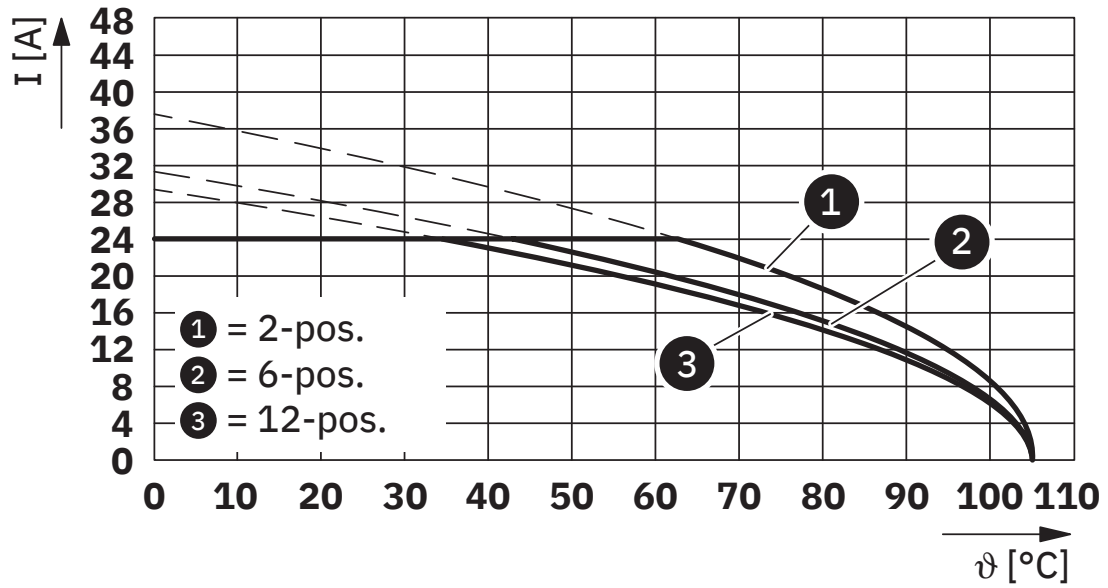
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Diagram



Type: SPC 4/...-ST-6,35 with PC 4/...-GU-6,35 P... THR

# SPC 4/ 5-ST-6,35 - PCB connector



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1232903>

|  <b>UL Recognized</b><br>Approval ID: E60425-20240415 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| F  | 600 V                 | 23 A                  | 24 - 10           | -                           |

|  <b>cULus Recognized</b><br>Approval ID: E60425-20240415 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   | 600 V                 | 23 A                  | 24 - 10           | -                           |
| C   | 600 V                 | 23 A                  | 24 - 10           | -                           |
| D   | 600 V                 | 5 A                   | 24 - 10           | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40061144 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  | 1000 V                | 24 A                  | -                 | 0.2 - 4                     |

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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 | 0.27 kg CO2e |
|---------|--------------|

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