

# SOL-SC-4ST-0-DC-1MPPT-1001 - String combiner box (SCB)



2404296

<https://www.phoenixcontact.com/us/products/2404296>

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String combiner box (SCB); MPP voltage: 1000 V DC; number of strings: 4; number of supported MPP trackers: 1; surge protection: T1 / T2; equipment: without special equipment; type of cable entry: SUNCLIX; scope of supply: DC connector for connecting the SCB

## Product description

The Solarline string combiner boxes (SCBs) are used in both small rooftop systems and large ground-mounted systems. The main tasks of the SCBs are the surge protection of the photovoltaic system, collecting strings (if necessary), and looping through the protective equipotential bonding conductor for the local equipotential bonding.

Further functions are optional and depend on the equipment.

Examples of optional functions include protecting the strings with string fuses and disconnecting the strings via DC switch disconnectors or DC fire department switches.

You can determine the full scope of functions of the SCB from its item designation (see the application note for the type key of the SCB, which can be downloaded in the "Downloads" area).

## Your advantages

- Fast installation and startup
- Standard-compliant switchgear and controlgear assembly, thanks to use of DIN EN 61439
- Application-oriented consultation
- Large portfolio of string combiner boxes in stock

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2404296       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Product key                          | DTHTAA        |
| GTIN                                 | 4055626396217 |
| Weight per piece (including packing) | 2,239.5 g     |
| Weight per piece (excluding packing) | 2,000 g       |
| Country of origin                    | DE            |

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## Technical data

### Notes

|                    |   |
|--------------------|---|
| Order information: | PV fuses are not installed in the SCB, although it would be technically possible to connect more than 2 parallel PV strings.<br>• Check whether additional protection using PV fuses is required in your specific application to ensure the safety and conformity to standards of the connection. |
|--------------------|---|

### Product properties

|                 |                                     |
|-----------------|-------------------------------------|
| Product type    | String combiner box (SCB)           |
| Scope of supply | DC connector for connecting the SCB |
| Design          | without special equipment           |

### Insulation characteristics

|                  |    |
|------------------|----|
| Protection class | II |
|------------------|----|

### Electrical properties

#### General

|                               |                |
|-------------------------------|----------------|
| MPP voltage $U_n$             | max. 1000 V DC |
| Open-circuit voltage $U_{OC}$ | max. 1100 V DC |
| Current per string $I_{max}$  | max. 10 A      |
| Total current per MPP tracker | max. 40 A      |

#### Surge protection

|  |               |
|--|---------------|
| EN type  | T1 / T2       |
| IEC test classification                              | T1 / T2       |
| Protection level $U_p$                               | $\leq 3.5$ kV |
| Total discharge current $I_{Total}$ (10/350) $\mu$ s | 5 kA          |
| Total discharge current $I_{Total}$ (8/20) $\mu$ s   | 40 kA         |
| Short-circuit current rating $I_{SCPV}$              | 40 A          |

### Input data

#### DC

|                                  |                     |
|----------------------------------|---------------------|
| Number of inputs (Strings)       | 4 (Per MPP tracker) |
| Number of supported MPP trackers | 1                   |

### Output data

#### DC

|  |                     |
|--|---------------------|
| Number of outputs (MPP tracker)            | 1                   |
| Number of outputs ( $\pm$ per MPP tracker) | 1 (Per MPP tracker) |

### Connection data

#### DC input

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|                           |   |
|---------------------------|---|
| Type of cable entry       | SUNCLIX                                   |
| Cable cross-section range | 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> |

## Lightning protection equipotential bonding & ground conductor

|                         |                       |
|-------------------------|-----------------------|
| Type of cable entry     | Cable gland           |
| Connection method       | Screw connection      |
| Cable cross section     | 2x 16 mm <sup>2</sup> |
| External cable diameter | 2x 6 mm ... 12 mm     |

## DC output

|                           |   |
|---------------------------|---|
| Type of cable entry       | SUNCLIX                                   |
| Cable cross-section range | 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> |

## Dimensions

### Housing

|        |        |
|--------|--------|
| Width  | 180 mm |
| Height | 180 mm |
| Depth  | 111 mm |

## Material specifications

|                     |                             |
|---------------------|-----------------------------|
| Material Housing    | Polycarbonate               |
| Material Cover/door | Polycarbonate (transparent) |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Degree of protection            | IP65             |
| Ambient temperature (operation) | -20 °C ... 55 °C |

## Standards and regulations

|                          |  |
|--------------------------|--|
| Standard designation     | Low-voltage switchgear and controlgear assemblies - Part 2:<br>Power switchgear and controlgear assemblies |
| Standards/specifications | EN 61439-2   |

# SOL-SC-4ST-0-DC-1MPPT-1001 - String combiner box (SCB)

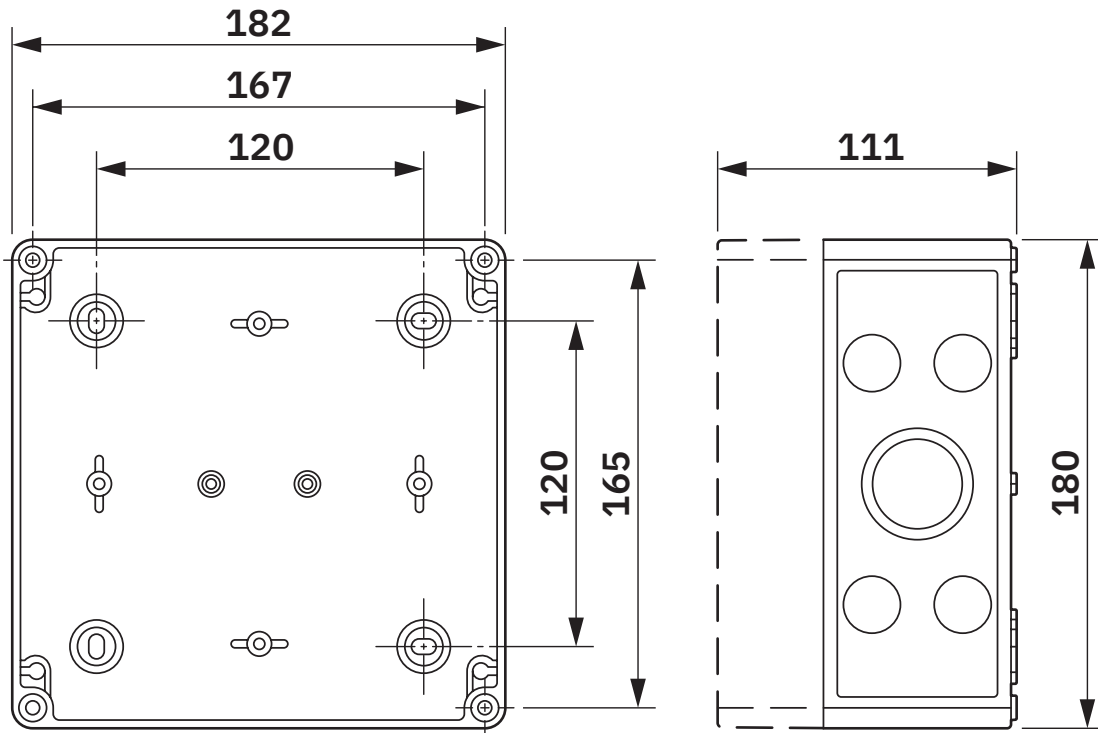


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## Drawings

Dimensional drawing



Housing dimensions

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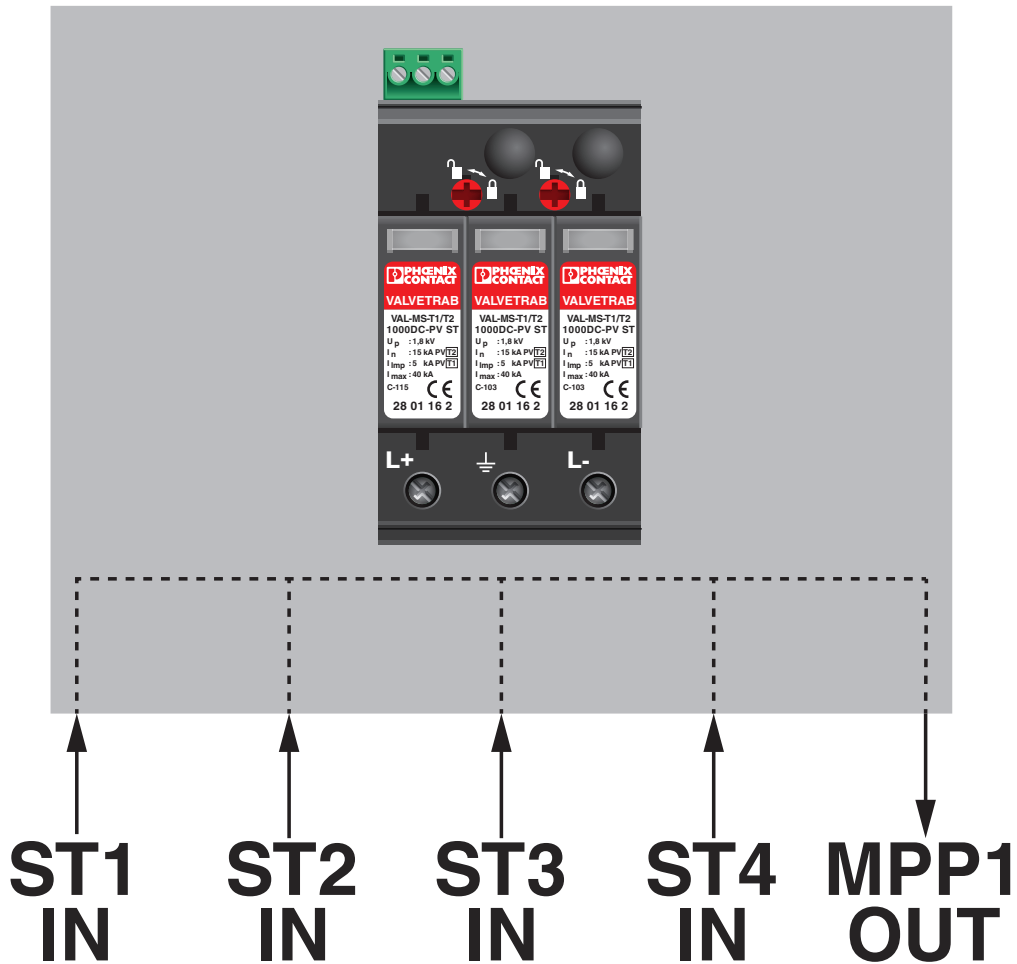


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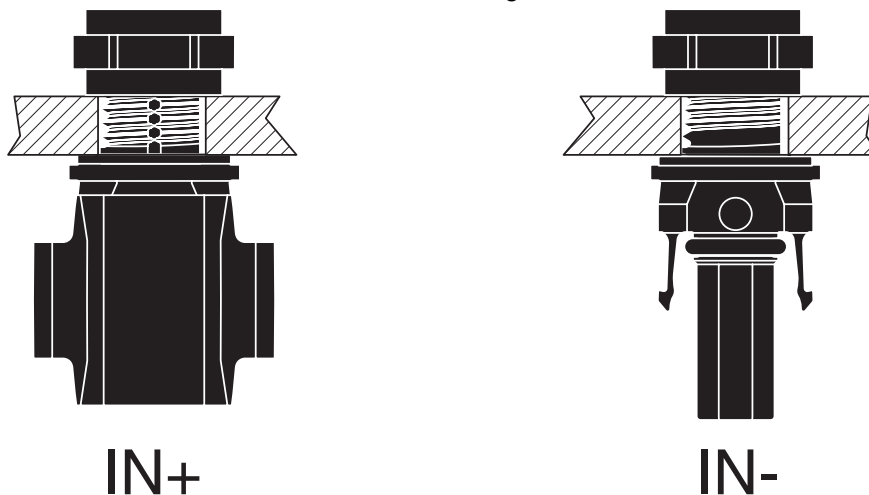
Connection diagram

## SPD1



Schematic application drawing

Schematic diagram



Connection of the PV strings

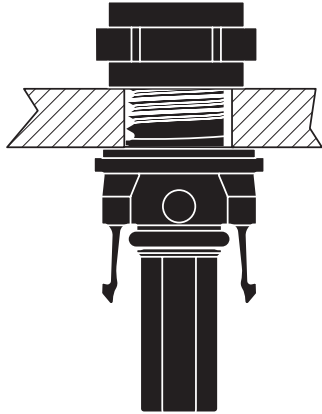
# SOL-SC-4ST-0-DC-1MPPT-1001 - String combiner box (SCB)



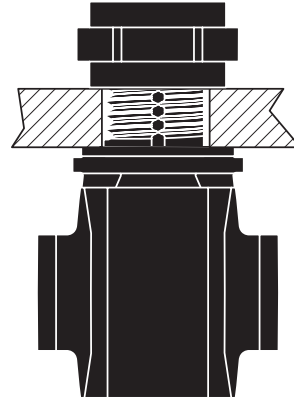
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Schematic diagram



OUT+



OUT-

Connection to the inverter

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Schematic diagram



Connection of the protective grounding conductor

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Schematic diagram



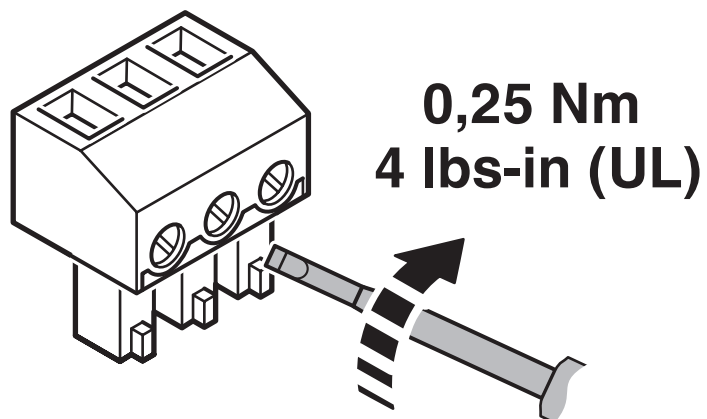
Connection of the protective equipotential bonding conductor

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Schematic diagram



Connection of the remote indication contact on the surge protection

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171490 |
| ECLASS-15.0 | 22570203 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC003857 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121100 |
|-------------|----------|

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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% |
|-------------------------------------|----------------------------|

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