MEDIUM VOLTAGE PRODUCT

TPU 5x.xx
Indoor supporting current transformers
Description
The TPU 5x.xx transformers are cast in epoxy resin and designed for insulation voltages up to 17.5 kV. The 13.8 kV and 7.2 kV versions have the same dimensions as the 17.5 kV. For certain types of panels there is a need for extra long creepage distance on the transformers. For this purpose you can order current transformers with „ribs on the top“. The transformers are manufactured in conformity with dimensions stated hereunder. The TPU 5x.xx transformers are designed as single-turn or multi-turn versions, with one transformer ratio or with double ratio having the possibility to be reconnectable on the primary or on the secondary side. The number of secondary windings (from 1 to 6 – max. 12 secondary terminals – 2 rows), depends on the combination of the technical parameters (such as the accuracy class, burden, short-circuit current, overcurrent factor…) and the transformer dimensions size.

When agreed between the manufacturer and the customer the TPU transformers can be provided with the voltage indication system. For this purpose, however, it is necessary to know in what insulation level the transformers shall operate. The secondary windings are used for measurement or protection purposes, or for special use (testing winding, „X“ class windings). One terminal of each secondary winding used and one terminal of short-circuited and not used winding have to be earthed during the transformer operation. The secondary windings are lead out into a cast-type secondary terminal box with plastic cover. The terminal cover is sealable. The terminals are provided with M5 screws for the termination and with throughgoing holes for direct earthing (first row of secondary terminals).

Technical data
The transformer can be mounted in any position. The transformer body is fixed by using four screws. Earth clamp M8 is on the transformer base plate.

Rated primary voltages
13.8 kV; 17.5 kV

Rated primary currents
10; 15; 20; 25; 30; 40; 50; 60; 75; 100; 150; 200; 300; 400; 500; 600; 750; 1 000; 1 250; 1 500; 2 000; 2 500; 3 000 and 3 200 A; primary reconnectable modification max till 400-800 A. Other primary currents can also be agreed upon with the customer.

Rated secondary currents
5 A; 1 A, others on request (possibility to combine different values in one transformer)

Accuracy classes
0.2; 0.25; 0.5; 0.55; 1; 3; 5; 5P10; 5P15; 5P20; 10P10; 10P15; 10P20; others on request.

Rated frequency
50 Hz or 60 Hz, others on request

The transformers are designed and manufactured in conformity with the following standards and recommendations: IEC, VDE, IEEE, BS, GOST and CSN, others on request.

Cantilever strength
5 kN

<table>
<thead>
<tr>
<th>Permissible torques for screw connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
</tr>
<tr>
<td>M8</td>
</tr>
<tr>
<td>M12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest voltage for equipment</td>
<td>13.8 up to 17.5 kV</td>
</tr>
<tr>
<td>Power frequency test voltage, 1 min.</td>
<td>10 - 42 kV</td>
</tr>
<tr>
<td>Lighting impulse test voltage</td>
<td>up to 95 kV</td>
</tr>
<tr>
<td>Rated primary current</td>
<td>10 - 3 200 A</td>
</tr>
<tr>
<td>Rated short-time thermal current</td>
<td>2 - 100 kA/1s</td>
</tr>
<tr>
<td>Reconnectable (primary till 400-800 A)</td>
<td>primary or secondary</td>
</tr>
</tbody>
</table>
Marking of current transformer outlets - example

- a Single-core design
- b Single-core design, reconnectable on the secondary side
- c Double-core design
- d Double-core design, reconnectable on the secondary side
- e Three-core design
- f Double-core design, reconnectable on the primary side

### Code designation - TPU current transformers

<table>
<thead>
<tr>
<th>TPU</th>
<th>x</th>
<th>x</th>
<th>.</th>
<th>x</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>voltage</td>
<td>current</td>
<td>dimension</td>
<td>primary terminals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.. to 17.5 kV</td>
<td>0.. to 600 A multiturn</td>
<td>1..short 148 mm, DIN</td>
<td>1..no pr.rec., no ribs /40x80mm, 80x80mm/</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.. to 2 500 A, combi multiturn, singleturn*</td>
<td>2..long 148 mm, DIN</td>
<td>2..prim. rec., no ribs /40x80mm, 80x80mm/</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.. to 1 250 A singleturn</td>
<td>3..short, wide..184 mm</td>
<td>3..no pr.rec., with ribs /60x68mm, 80x80mm/</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>4.. to 1 500 A singleturn</td>
<td>4..long, wide..184 mm</td>
<td>4..prim. rec., with ribs /40x80mm, 80x80mm/</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>5.. to 2 000 A singleturn</td>
<td>5..middle 148 mm, DIN</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.. to 2 500 A singleturn</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>7.. to 3 000 A singleturn</td>
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<tr>
<td></td>
<td>8.. to 3 200 A singleturn</td>
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</tbody>
</table>

* TPU 51.41 and TPU 51.43 only

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### Standardized insulation levels of TPU 5x.xx transformers

- 15.5/34/95 kV
- 17.5/38/95 kV
- 17.5/42/95 kV
Dimensional Drawings

**TPU 50.11**  
**TPU 53.11**  
Weight: 20-24kg  
Creepage distance: 201 mm

**Drawing n.** | **Polarity**
--- | ---
44614550 | P1 to secondary terminal
44614560 | P2 to secondary terminal

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**TPU 50.12**  
Weight: 19-25kg  
Creepage distance: 215mm

**Drawing n.** | **Polarity**
--- | ---
44614570 | P1 to secondary terminal
44614580 | P2 to secondary terminal

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**TPU 50.13**  
**TPU 53.13**  
Weight: 20-24kg  
Creepage distance: 214mm

**Drawing n.** | **Polarity**
--- | ---
44614590 | P1 to secondary terminal
44614600 | P2 to secondary terminal

---

**TPU 50.14**  
Weight: 19-25kg  
Creepage distance: 215mm

**Drawing n.** | **Polarity**
--- | ---
44614610 | P1 to secondary terminal
44614620 | P2 to secondary terminal
### TPU 50.21
TPU 53.21

- **Weight:** 29-37kg
- **Creepage distance:** 201 mm

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### TPU 50.22

- **Weight:** 29-37kg
- **Creepage distance:** 215 mm

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### TPU 50.23
TPU 53.23

- **Weight:** 29-37kg
- **Creepage distance:** 214 mm

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### TPU 50.24

- **Weight:** 29-37kg
- **Creepage distance:** 215 mm

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#### Drawing n. Polarity

<table>
<thead>
<tr>
<th>Drawing n.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>44614630</td>
<td>P1 to secondary terminal</td>
</tr>
<tr>
<td>44614640</td>
<td>P2 to secondary terminal</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>44614650</td>
<td>P1 to secondary terminal</td>
</tr>
<tr>
<td>44614660</td>
<td>P2 to secondary terminal</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Drawing n.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>44614670</td>
<td>P1 to secondary terminal</td>
</tr>
<tr>
<td>44614680</td>
<td>P2 to secondary terminal</td>
</tr>
</tbody>
</table>
**TPU 5X.XX INDOOR SUPPORTING CURRENT TRANSFORMERS**

**TPU 54.23**  
TPU 55.23  
TPU 56.23  
TPU 57.23  
TPU 58.23  

Weight: **40-45kg**  
Creepage distance: **201mm**

**TPU 54.31**  
TPU 55.31  
TPU 56.31  
TPU 57.31  
TPU 58.31  

Weight: **34-42kg**  
Creepage distance: **210mm**

**TPU 54.33**  
TPU 55.33  
TPU 56.33  
TPU 57.33  
TPU 58.33  

Weight: **34-42kg**  
Creepage distance: **210mm**

**TPU 54.41**  
TPU 55.41  
TPU 56.41  
TPU 57.41  
TPU 58.41  

Weight: **46-58kg**  
Creepage distance: **210mm**

### Drawing n. Polarity

- **TYP 4600502F0101 P1 to secondary terminal**
- **TYP 4600502F0102 P2 to secondary terminal**

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**Weight:** 34-42kg  
**Creepage distance:** 210mm
TPU 54.43
TPU 55.43
TPU 56.43
TPU 57.43
TPU 58.43

Weight: 46-58kg
Creepage distance: 210mm