Outdoor current transformers TPO xx.xx
Rated voltages: 25 kV and 40,5 kV
Rated currents: 10 ÷ 3000A

The TPO xx.xx current transformers are cast in hydrophobic epoxy resin, capable of withstanding outdoor environmental conditions and designed for insulation voltages up to:
- 25 kV for TPO 6x.xx,
- 40,5kV for TPO 7x.xx,

Main features:
• Designed and type tested according to IEC 61869-2,
• High level breaking performance with current up to 100kA,
• Casted with HCEP mixture which gives hydrophobicity performance,
• Designed and tested for harsh conditions.

Description
For insulation and protection, transformers are cast in hydrophobic cycloaliphatic epoxy resin (HCEP), capable of withstanding outdoor environmental conditions. The HCEP material offers superior arc track, ozone, and ultraviolet-resistive properties while maintaining physical strength.
The hydrophobic surface properties of HCEP ensure highly reliable performance in wet or humid environments.
The TPO xx.xx transformers are designed as single-or multiple turn transformers, with one transformer ratio, and, if necessary, with the possibility to be reconnectable on the primary or secondary side.
The number of secondary windings ranges from 1 to 4 (but usually 2) depending on parameters (such as the accuracy class, short-circuit current, overcurrent factor, burden,...).
The secondary windings are used for measurement or protection purposes, or for special use (testing winding, “PX” class).
One terminal of each secondary winding used and one terminal of the unused, short-circuited, windings must be earthed during transformer operation.
The transformer body is fixed by using four screws.
For ease of handling and assembly the transformer is supplied with suspension lugs. The secondary winding is led out into a cast secondary terminal board covered with a sealed cover.
The transformers are designed and manufactured to conform with the requirements and recommendations of IEC 61869-2 standard.

Terminals
Primary terminals are electro-tin copper. Clamp-type secondary terminals accommodate up to 6 mm² wire.

Junction box
The Junction box is equipped with PG21 cable gland.
The box is casted together with transformer. Junction box cover is screwed to junction box with additional protection sealing.

Mounting
The TPO is mounted by corrosion-resistant aluminium rails and can be mounted in vertical positions (as visible on the pictures above).
Stress relief devices should be used to support cable connections.

Test reports
Test reports are stored electronically and can be e-mailed in various formats at the time of shipment.
### Parameters

<table>
<thead>
<tr>
<th></th>
<th>TPO 6x.xx</th>
<th>TPO 7x.xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated primary currents(^1) [A]</td>
<td>10 ÷ 3000</td>
<td></td>
</tr>
<tr>
<td>Primary current changeover [A]</td>
<td>20-40 + 600-1200</td>
<td></td>
</tr>
<tr>
<td>Rated secondary currents(^1) [A]</td>
<td>5;1</td>
<td></td>
</tr>
<tr>
<td>Rated frequency [Hz]</td>
<td>50;60</td>
<td></td>
</tr>
<tr>
<td>Insulation levels [kV]</td>
<td>17.5/38/95</td>
<td>17.5/38/95</td>
</tr>
<tr>
<td></td>
<td>24/50/125</td>
<td>24/50/125</td>
</tr>
<tr>
<td></td>
<td>25/55/125</td>
<td>25/55/125</td>
</tr>
<tr>
<td></td>
<td>36/70/170</td>
<td>36/70/170</td>
</tr>
<tr>
<td></td>
<td>38.5/80/180</td>
<td>38.5/80/180</td>
</tr>
<tr>
<td></td>
<td>40.5/95/200</td>
<td>40.5/95/200</td>
</tr>
<tr>
<td>Rated short - time thermal current [kA]</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Max. rated burden/classes(^2) [VA/cl]</td>
<td>3 + 60/0,2;0,25;0,5;0,55;1;3;5P;10P</td>
<td></td>
</tr>
<tr>
<td>Insulation class</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature [°C]</td>
<td>-60...+55</td>
<td></td>
</tr>
<tr>
<td>Reconnectable</td>
<td>primary or secondary</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>62</td>
<td>90</td>
</tr>
<tr>
<td>Creepage distance [mm]</td>
<td>1100</td>
<td>1600</td>
</tr>
</tbody>
</table>

1) Different primary currents can also be provided to special order.
2) It is possible to combine different values in one transformer.
3) Other classes are available on request.

### Basic marking

<table>
<thead>
<tr>
<th>TPO xx . xx</th>
<th>6 for 24 kV</th>
<th>7 for 36 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1...non-reconnectable on primary side</td>
<td>2... reconnectable on primary side</td>
</tr>
<tr>
<td></td>
<td>0...up to 600 A multi-turn</td>
<td>1...up to 400 A one-turn</td>
</tr>
<tr>
<td></td>
<td>2...up to 600 A one-turn</td>
<td>3...up to 1250 A one-turn</td>
</tr>
<tr>
<td></td>
<td>4...up to 1500 A one-turn</td>
<td>5...up to 2000 A one-turn</td>
</tr>
<tr>
<td></td>
<td>6...up to 3000 A one-turn</td>
<td></td>
</tr>
</tbody>
</table>

### Marking of the current transformer outlets

**a) Single-core design**

```
   P1
   \|/     \|/
  01 - 02
```

**b) Double-core design**

```
   P1
   \|/     \|/
  101 - 102
```

**c) Three-core design**

```
   P1
   \|/     \|/
  101 - 102
```

**d) Single-core design reconnectable on secondary side**

```
   P1
   \|/     \|/
  81 - 82
```

**e) Double-core design, reconnectable on the secondary side**

```
   P1
   \|/     \|/
  101 - 102
```

**f) Double-core design, reconnectable on the primary side**

```
   C1
   \|/     \|/
  101 - 102
```