Current transformers

Outdoor operation
Oil-paper insulated

JOF (24 – 550) kV
Current transformers type JOF are used in high voltage networks within the 24–550 kV range. They transform high current into standardised values for meters, measuring and protection devices.

The active part of the current transformer is located in the head housing. Based on customer specifications, the optimum design is calculated and the corresponding head housing is determined.

The high voltage insulation is based on oil-paper technology. High-grade, PCB-free mineral oil is used. The fine graded bushing is inside the insulator.

The expansion bellows made from stainless steel is located above the head housing of the current transformer. This unit acts as volume compensation for the oil in case of temperature variations. The oil expansion is indicated by a mechanical system in the window of the bellows cover.

All metal housings and flanges are made from a corrosion resistant aluminium alloy. These parts can be colour coated on request.

All current transformers have either a high-quality porcelain or a high-grade silicone composite insulator. Different creepage distances are available according to the different pollution classes, as specified in the standards.

The hermetic sealed housing protects the oil-paper insulation against atmospheric influences.

The generously sized terminal box has a cover which can be opened sidewards. This allows easy connection of the secondary cables. The terminal box has a flange without holes by default. Cable glands, circuit diagram and individual safety instructions can be preinstalled on request.

Advantages of current transformers

- Precise electric field control and prevention of local partial discharges through fine graded bushing
- Higher safety through prevention of subsequent arcing
- High operating safety as there are no active parts in the isolator
- Minimum oil volume through optimised design
- Ambient temperature –40 ... + 40 °C
 Highlights

- A clear and easy primary changeover with a ratio of 1:2 or 1:2:4 is available.
- The primary changeover is adjusted with one metal plate at one side of the head only.
- No need to dismount or move the primary connections during adjustment.

- The inner side of the instrument transformer is protected against moisture by means of special sealing rings.
- All housings are designed with a drain-age area to protect the sealing surfaces of the housings against rain. This significantly reduces crevice corrosion.
- The housing elements are connected with special stainless steel screws. They are designed in such a way that no humidity can enter the screw hole.

- The generously sized terminal box with a cover that can be opened sidewards, is secured with captive screws. It can accommodate terminal blocks, fuses, spark gaps and sealable covers.
- By default, all terminal boxes have a flange without holes. Cable glands can be preinstalled on request.
Design

- Colour coated housings and flanges
- Spark gaps in the terminal box
- Heater in the terminal box
- Sealable cover on terminals for billing purposes
- Tan δ terminal for capacitance and dielectric dissipation factor measurement
- Sealable oil drain valve
### Technical data

**24 – 170 kV**

![Diagram of 24 – 170 kV transformer](image)

**245 – 550 kV**

![Diagram of 245 – 550 kV transformer](image)

<table>
<thead>
<tr>
<th>Type JOF</th>
<th>24 / 36</th>
<th>52 / 72</th>
<th>123</th>
<th>145</th>
<th>170</th>
<th>245</th>
<th>362</th>
<th>420</th>
<th>550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest voltage for equipment</td>
<td>kV</td>
<td>24 / 36</td>
<td>52 / 72.5</td>
<td>123</td>
<td>145</td>
<td>170</td>
<td>245</td>
<td>362</td>
<td>420</td>
</tr>
<tr>
<td>Rated power-frequency withstand voltage</td>
<td>kV</td>
<td>50 / 70</td>
<td>95 / 140</td>
<td>230</td>
<td>275</td>
<td>325</td>
<td>460</td>
<td>510</td>
<td>630</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage</td>
<td>kV</td>
<td>125 / 170</td>
<td>250 / 325</td>
<td>550</td>
<td>650</td>
<td>750</td>
<td>1050</td>
<td>1175</td>
<td>1425</td>
</tr>
<tr>
<td>Primary rated current</td>
<td>A</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
<td>≤ 5000</td>
</tr>
<tr>
<td>Secondary rated current</td>
<td>A</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
<td>1 / 5</td>
</tr>
<tr>
<td>Rated short-time thermal current [Ith]</td>
<td>kA/1s</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
<td>≤ 63</td>
</tr>
<tr>
<td>Accuracy class</td>
<td></td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td>0.1 – 3; 0.25; 0.55; P; PR; PX; PXR; TPX; TPY; TPZ</td>
</tr>
<tr>
<td>Max. number of CT cores</td>
<td></td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type JOF</th>
<th>24 / 36</th>
<th>52 / 72</th>
<th>123</th>
<th>145</th>
<th>170</th>
<th>245</th>
<th>362</th>
<th>420</th>
<th>550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of unit*</td>
<td>A mm</td>
<td>1632</td>
<td>1782</td>
<td>2256</td>
<td>2532</td>
<td>2631</td>
<td>3912</td>
<td>4440</td>
<td>4944</td>
</tr>
<tr>
<td>Height to primary terminal*</td>
<td>B mm</td>
<td>1186</td>
<td>1336</td>
<td>1810</td>
<td>2086</td>
<td>2185</td>
<td>3248</td>
<td>3776</td>
<td>4280</td>
</tr>
<tr>
<td>Depth of unit including terminal box</td>
<td>C mm</td>
<td>725</td>
<td>725</td>
<td>725</td>
<td>725</td>
<td>725</td>
<td>851</td>
<td>851</td>
<td>851</td>
</tr>
<tr>
<td>Depth of unit base</td>
<td>D mm</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>650</td>
<td>650</td>
<td>650</td>
</tr>
<tr>
<td>Width of unit base</td>
<td>E mm</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>700</td>
<td>700</td>
<td>700</td>
</tr>
<tr>
<td>Distance between screw holes at base</td>
<td>F mm</td>
<td>450</td>
<td>450</td>
<td>450</td>
<td>450</td>
<td>450</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Min. creepage distance*</td>
<td>mm</td>
<td>1340</td>
<td>1950</td>
<td>3080</td>
<td>3900</td>
<td>4394</td>
<td>8250</td>
<td>10230</td>
<td>11600</td>
</tr>
<tr>
<td>Approximate weight*</td>
<td>kg</td>
<td>220</td>
<td>230</td>
<td>285</td>
<td>295</td>
<td>300</td>
<td>830</td>
<td>800</td>
<td>900</td>
</tr>
</tbody>
</table>

* with standard composite silicone insulator, creepage distance 25 mm/kV
Global presence

PFIFFNER Instr. Transformers Ltd
5042 Hirschthal
Switzerland
☎ +41 (0)62 7392828
✉ sales@pmw.ch
🌐 www.pfiffner-group.com/pch

PFIFFNER Technologie Ltd
5042 Hirschthal
Switzerland
☎ +41 (0)62 7392828
✉ technologie@pmw.ch
🌐 www.pfiffner-group.com/pte

PFIFFNER Systems Ltd
4303 Kaiseraugst
Switzerland
☎ +41 (0)61 4676111
✉ info@pfiffner-systems.com
🌐 www.pfiffner-systems.com

PFIFFNER Deutschland GmbH
25524 Itzehoe
Germany
☎ +49 (0)48 21408270
✉ sales@pfiffner-messwandler.de
🌐 www.pfiffner-group.com/pde

PFIFFNER Transformatör A.S.
06750 Akyurt/Ankara
Turkey
☎ +90 (0)31 28475521
✉ info@pfiffner.com.tr
🌐 www.pfiffner-group.com/ptr

PFIFFNER do Brasil Ltda
88307-740 Itajaí
Brazil
☎ +55 (0)47 33481700
✉ pfiffner@pfiffner.com.br
🌐 www.pfiffner-group.com/pbr

MGC Moser-Glaser Ltd
4303 Kaiseraugst
Switzerland
☎ +41 (0)61 4676111
✉ info@mgc.ch
🌐 www.mgc.ch

ALPHA Elektrotechnik Ltd
2560 Nidau
Switzerland
☎ +41 (0)32 3328700
✉ mail@alpha-et.ch
🌐 www.alpha-et.ch

This document has been drawn up with the utmost care. We cannot, however, guarantee that it is entirely complete, correct or up-to-date. ©Copyright PFIFFNER / Subject to change without notice 2017.04

PFIFFNER
Current and voltage – our passion

HIGH VOLTAGE
MEDIUM VOLTAGE
LOW VOLTAGE