Combined instrument transformers

Outdoor operation
Oil-paper insulated

EJOF (24 - 170) kV

PFIFFNER

Represented by: T&D Products Ltd
General description

Combined instrument transformers type EJOF are used in high voltage networks within the 24–170 kV range. They transform high voltage and high current into standardised values for meters, measuring and protection devices.

The inner construction of a combined instrument transformer is similar to the construction of the current and voltage transformer. The current transformer is located in the head and the voltage transformer in the bottom housing of the combined instrument transformer. The fine graded bushings are inside the insulator.

The high voltage insulation is based on oil-paper technology. High-grade, PCB-free mineral oil is used.

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

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

All combined instrument 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 sideways. 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 combined instrument transformers

- Reduced transport costs with one unit instead of two
- Less space needed with just one footprint
- Lower material costs due to a reduced number of supports and fewer primary connections
- Lower installation effort as only one unit has to be installed instead of two
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 sideways, is secured with captive screws. It can accommodate terminal blocks, fuses, surge arrestors, additional auxiliary contacts, spark gaps and sealable covers.

By default, all terminal boxes have a flange without holes. Cable glands can be preinstalled on request.

An additional terminal box can be supplied on request.
Possible options

- Colour coated housings and flanges
- Fuses or miniature circuit breakers (MCBs) with or without auxiliary contacts in the terminal box
- Surge arrestors and spark gaps in the terminal box
- Pressure monitoring with auxiliary contacts
- Heater in the terminal box
- Sealable cover on terminals for billing purposes
- Additional terminal box
- Tan δ terminal for capacitance and dielectric dissipation factor measurement
- Sealable oil drain valve
## Technical data

### Type EJOF

<table>
<thead>
<tr>
<th>Type EJOF</th>
<th>24</th>
<th>36</th>
<th>72</th>
<th>123</th>
<th>145</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest voltage for equipment kV</td>
<td>24</td>
<td>36</td>
<td>72.5</td>
<td>123</td>
<td>145</td>
<td>170</td>
</tr>
<tr>
<td>Rated power-frequency withstand voltage kV</td>
<td>50</td>
<td>70</td>
<td>140</td>
<td>230</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage kV</td>
<td>125</td>
<td>170</td>
<td>325</td>
<td>550</td>
<td>650</td>
<td>750</td>
</tr>
<tr>
<td>Frequency Hz</td>
<td>16.7/50/60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary rated current A</td>
<td>≤5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary rated current A</td>
<td>1/5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated short-time thermal current [Ith] kA/1s</td>
<td>≤63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated dynamic current [Idyn] kA</td>
<td>≤160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy class CT part</td>
<td>0.1 – 3; 0.2S; 0.5S; P; PR; PX; PXR; TPX; TPY; TPZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy class VT part</td>
<td>0.1 – 3; 3P; 6P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated thermal limiting output VT part VA</td>
<td>≤1500</td>
<td>≤3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. simultaneous burden (cl. 0.2) VA</td>
<td>200</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. number of CT cores</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. number of VT windings</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>Type EJOF</th>
<th>24</th>
<th>36</th>
<th>72</th>
<th>123</th>
<th>145</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of unit* A mm</td>
<td>1591</td>
<td>1591</td>
<td>1791</td>
<td>2484</td>
<td>2659</td>
<td>2959</td>
</tr>
<tr>
<td>Height to primary terminal* B mm</td>
<td>1145</td>
<td>1145</td>
<td>1345</td>
<td>2038</td>
<td>2203</td>
<td>2503</td>
</tr>
<tr>
<td>Depth of unit including terminal box C mm</td>
<td>526</td>
<td>526</td>
<td>526</td>
<td>710</td>
<td>710</td>
<td>730</td>
</tr>
<tr>
<td>Depth of unit base D mm</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Width of unit base E mm</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Distance between screw holes at base F mm</td>
<td>310</td>
<td>310</td>
<td>310</td>
<td>450</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td>Min. creepage distance* mm</td>
<td>1040</td>
<td>1040</td>
<td>1900</td>
<td>3080</td>
<td>3770</td>
<td>4394</td>
</tr>
<tr>
<td>Approximate weight* kg</td>
<td>295</td>
<td>295</td>
<td>470</td>
<td>500</td>
<td>515</td>
<td>550</td>
</tr>
</tbody>
</table>

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

PFIFFNER Instrument Transformers Ltd
5042 Hirschthal
Switzerland
Phone +41 (0)62 7392828
Fax +41 (0)62 7392810
E-Mail sales@pmw.ch
Internet www.pmw.ch

PFIFFNER Transformatör A.S.
06750 Akyurt/Ankara
Turkey
Phone +90 (0)31 28475521
Fax +90 (0)31 28475421
E-Mail info@pfiffner.com.tr
Internet www.pfiffner.com.tr

PFIFFNER do Brasil Ltda
88307-740 Itajaí
Brazil
Phone +55 (0)47 33481700
Fax +55 (0)47 33481700
E-Mail pfiffner@pfiffner.com.br
Internet www.pfiffner.com.br

PFIFFNER Deutschland GmbH
25524 Itzehoe
Germany
Phone +49 (0)48 21 408270
Fax +49 (0)48 21 4082729
E-Mail sales@pfiffner-messwandler.de
Internet www.pfiffner-messwandler.de

Represented by:

Visit Us On Line At: www.tanddproducts.com   E-MAIL Us At: quotes@tanddproducts.com

To contact the office nearest you go to www.tanddproducts.com and click on “Contact Us”