

Current transformers

Outdoor operation
Oil-paper insulated

JOF (24–550) kV





General description

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 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 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 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 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



Highlights



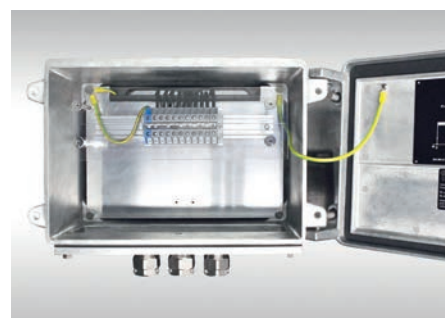
Easy primary changeover

- 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.



Excellent protection against moisture

- 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.



Installation-friendly terminal box

- The generously sized terminal box with a cover that can be opened sideways, 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

Bellows cover with oil level indicator

Expansion bellows

Lifting lugs

Housing with drainage area

Active part with iron cores, secondary windings and high voltage insulation

Primary connection

Primary changeover

Porcelain or silicone composite insulator

Bushing

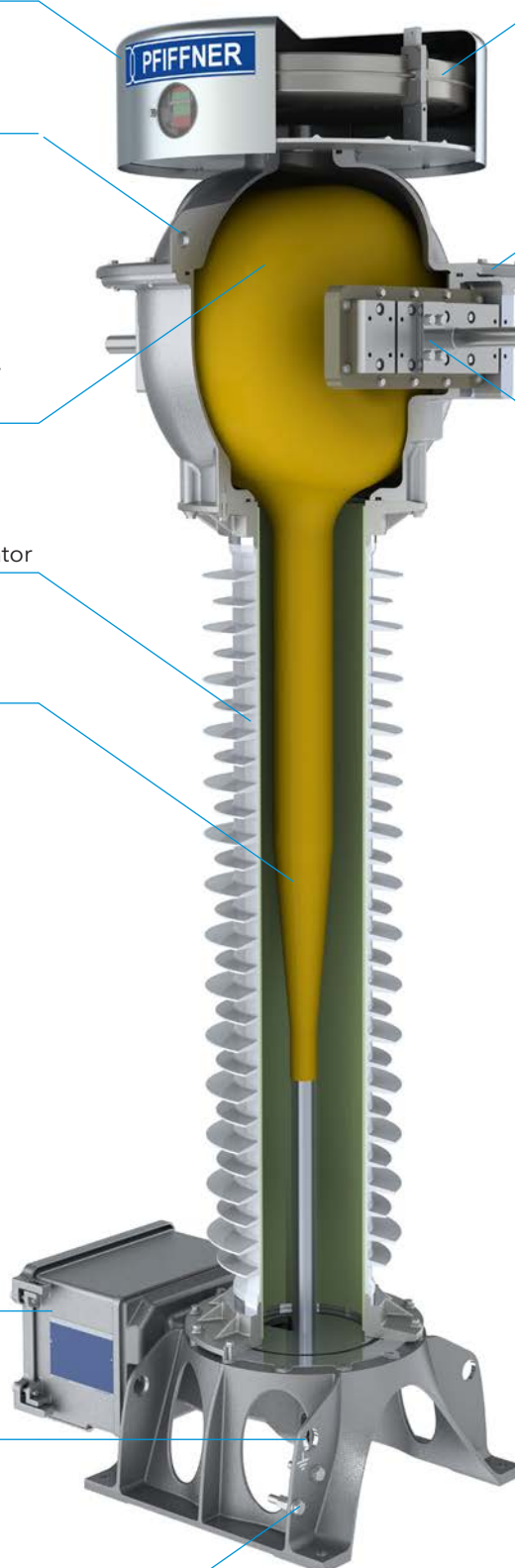
Possible options

- 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 di-electric dissipation factor measurement
- Sealable oil drain valve

Terminal box with rating plate

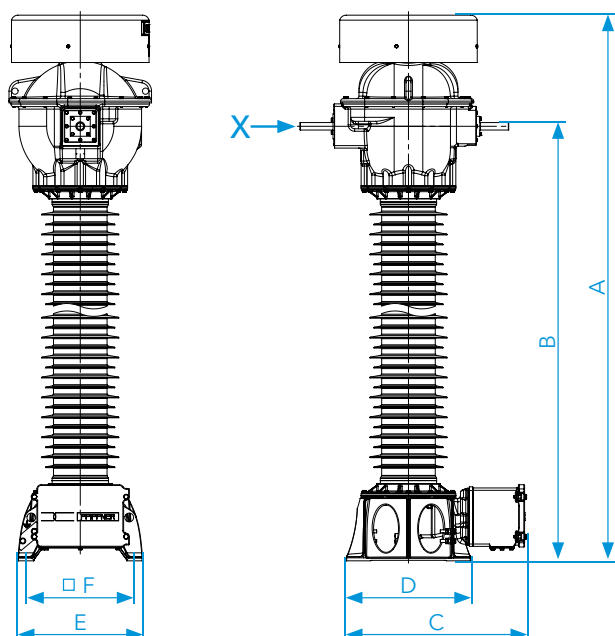
Oil drain valve

Main earth connection

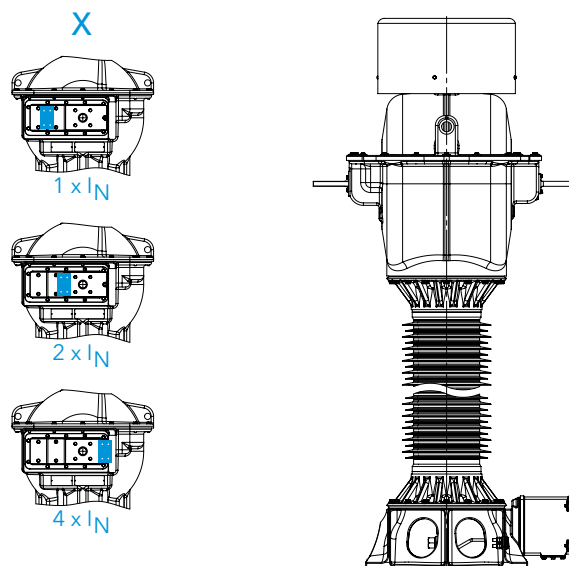


Technical data

24–170 kV



245–550 kV



Type JOF		24	36	72	123	145	170	245	362	420	550
Standard		IEC/IEEE									
Highest voltage for equipment	kV	24	36	72.5	123	145	170	245	362	420	550
Rated power-frequency withstand voltage	kV	50	70	140	230	275	325	460	510	630	680
Rated lightning impulse withstand voltage	kV	125	170	325	550	650	750	1050	1175	1425	1550
Frequency	Hz	16.7/50/60									
Primary rated current	A	1–4000									
Secondary rated current	A	1/5									
Rated short-time thermal current [I _{th}]	kA/1s	≤ 63									
Rated dynamic current [I _{dyn}]	kA	≤ 160									
Accuracy class		0.1–3; 0.2S; 0.5S; P; PR; PX; PXR; TPX; TPY; TPZ									
Max. number of CT cores		7									

Type JOF			24	36	72	123	145	170	245	362	420	550
Height of unit*	A	mm	1632	1632	1782	2256	2532	2631	3912	4440	4944	5644
Height to primary terminal*	B	mm	1186	1186	1336	1810	2086	2185	3248	3776	4280	4980
Depth of unit including terminal box	C	mm	725	725	725	725	725	725	851	851	851	851
Depth of unit base	D	mm	500	500	500	500	500	500	650	650	650	650
Width of unit base	E	mm	500	500	500	500	500	500	700	700	700	700
Distance between screw holes at base	F	mm	450	450	450	450	450	450	600	600	600	600
Min. creepage distance*		mm	1340	1340	1950	3080	3900	4394	8250	10230	11600	15260
Approximate weight*		kg	220	220	230	285	295	300	830	800	900	1000

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

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MANUFACTURER OF INSTRUMENT TRANSFORMERS SINCE 1927

HIGH VOLTAGE

MEDIUM VOLTAGE

LOW VOLTAGE