



# Inductive voltage transformers

Outdoor operation  
SF<sub>6</sub>-gas insulated

EGF (245 – 550) kV



**PFIFFNER**

Current and voltage – our passion



## General description

**Voltage transformers type EGF are used in high voltage substations within the 245–550 kV range. They transform high voltage into standardised, equivalent values for meters, measuring and protection devices.**

The active section of the voltage transformer is located in the pressure-resistant foot housing. The iron core is on earth potential. The secondary windings are directly positioned on the iron core. The secondary windings are passed through an SF<sub>6</sub>/air bushing into the terminal box. The high voltage connection is implemented via a short-circuit proof aluminium pipe.

The electrical field distribution along the insulator is optimised by a special layout of the control electrode inside the silicone composite insulator.

The housing components consist of helium-tight, corrosion-resistant cast aluminium. All housing components under pressure are individually type-tested according to applicable pressure vessel standards.

The SF<sub>6</sub> gas density is monitored by a temperature-compensated gas density monitor with alarm contacts. The special design means the function of the gas density moni-

tor can be checked without dismounting it.

A corrosion-resistant metal rupture disc, protected by a metal cover, is located at the top of the housing and ensures safe pressure relief in case of error.

The generously designed terminal box is equipped with a cover that opens sideways.

Pure SF<sub>6</sub> gas is used for ambient temperatures up to -40°C. The transformer is filled with a mixed gas for lower ambient temperatures up to -60°C.



### Advantages of inductive voltage transformers

- High operating safety through optimised current distribution in the field-controlled bushing
- Low weight and high creepage resistance through the use of composite insulators
- Special iron core provides protection against any ferro resonances



# Highlights



## Optimally protected density monitor

- Precise function is ensured through temperature compensation down to  $-60^{\circ}\text{C}$ .
- The density monitor is equipped with two alarm contacts to signal a pressure loss.
- The density monitor can be checked without dismantling it via a special test connection.
- A solid metal cover protects the density monitor against mechanical damage and direct sunlight.



## 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, additional auxiliary contacts and sealable covers.
- The terminal box is equipped as standard with a blind flange. Cable glands can be installed on request.
- The terminal box has a protected ventilation aperture to prevent condensation.



# Design

Primary terminal

Metal rupture disc

Bushing

Composite insulator

Control electrode

Gas density monitor

Lifting lugs

Terminal box with rating plate

Primary winding

Voltage transformer core

Base with earth connection

## Possible options

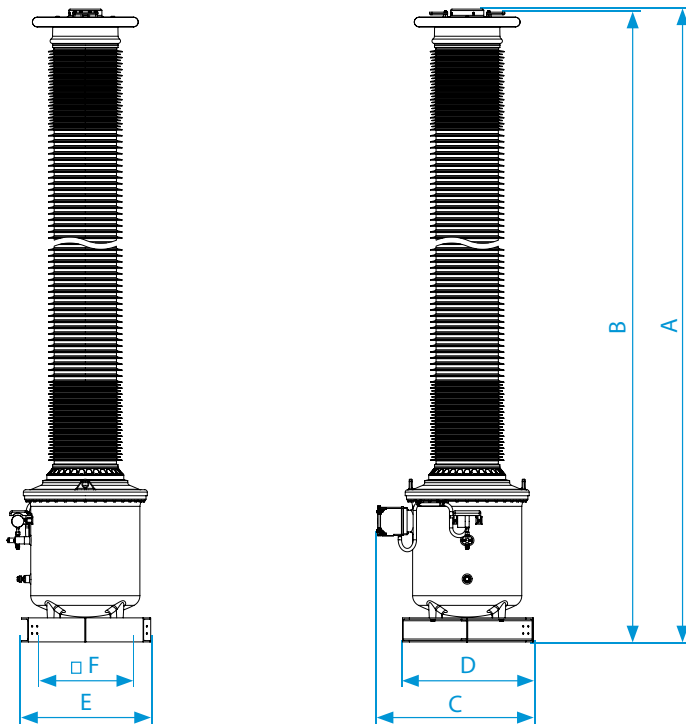
- Colour coated housings and flanges
- Fuses or circuit breakers (with or without auxiliary contacts) in terminal box
- Heater in the terminal box
- Sealable cover on terminals for billing purposes
- Additional terminal box
- Sealable gas filling valve

Gas density monitor inspection connection

Filling connection



# Technical data



Type EGF		245	300	330	362	420	550
Standard		IEC / IEEE					
Highest voltage for equipment	kV	245	300	330	363	420	550
Rated power-frequency withstand voltage	kV	460	460	460	575	630	680
Rated lightning impulse withstand voltage	kV	1050	1050	1175	1175	1425	1550
Frequency	Hz	50 / 60					
Accuracy class		0.1 – 3; 3P; 6P					
Rated thermal limiting output	VA	≤ 3000					
Max. simultaneous burden (cl. 0.2)	VA	300					
Max. number windings		5					
Nominal operating / transport overpressure (20°C)	bar	4 / 0.5					

Type EGF		245	300	330	362	420	550
Height of unit*	A mm	3930	3930	4993	4993	5353	6183
Height to primary terminal*	B mm	3905	3905	4968	4968	5328	6153
Depth of unit including terminal box	C mm	1052	1052	1293	1293	1293	1293
Depth of unit base	D mm	742	742	1088	1088	1088	1088
Width of unit base	E mm	730	730	1075	1075	1075	1075
Distance between screw holes at base	F mm	600	600	900	900	900	900
Min. creepage distance*	mm	6700	7500	8250	9050	10500	13759
Gross weight / gas weight, approx.*	kg	670 / 21	670 / 21	805 / 34	805 / 34	820 / 36	850 / 39

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

# Global presence

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Current and voltage – our passion

HV

HIGH VOLTAGE

MV

MEDIUM VOLTAGE

LV

LOW VOLTAGE