

Main technical characteristics

Parameter	Norm	
Rated voltage, kV	110	220
Maximum operating voltage, kV	126	252
Rated frequency, Hz	50	
Rated primary current I _{rat.} , A (design versions) • of current transformers with a possibility to change a number of coils in primary winding ¹	150-300-600 200-400-800 250-500-1000 300-600-1200 375-750-1500 400-800-1600 500-1000-2000	
• of current transformers without a possibility to change a number of coils in primary winding	600; 800; 1000; 1200; 1500; 2000; 3000; 4000	
Rated secondary current (versions), I _{2rat.} , A	1 and/or 5	
Number of secondary windings: ²⁾	- for measuring and record	1, 2
	- for protection	3, 4, 5
Classes of accuracy of secondary windings for measuring	0,2S; 0,5S; 0,2; 0,5	
Classes of accuracy of secondary windings for protection	5P; 10P	
Rated secondary load, VA	at cos φ ² =0,8,	3; 5; 10; 15; 20; 25; 30; 50; 60; 75; 100
	- for measuring and protection	
	at cos φ ² =1	
	- for measuring	2
Accuracy limit factor of secondary windings for protection, K _{rat.}	10, 20, 30, 40	
Rated safety factor of secondary windings' devices for measuring and record, K _{s, rat.}	от 5 до 15	
Short-time withstand current, I _s , kA	до 63	
Peak withstand current, I _p , kA	64 ³⁾	
	80 ⁴⁾	
	102 (160) ⁵⁾	
Duration of short-time withstand current, s	3	
Creepage distance, sm.	315; 390	630; 790
Insulating condition of climatic version • U1 • UKHL1* • UKHL1 • KHL1	-	Sf6
	Sf6	-
	nitrogen	mixture
	mixture	-
Gas leakage per year, % from gas mass, no more	0,5	
Gas volume in current transformer, dm ³	188	375
Gas mass in current transformer at filling pressure, kgr	- SF6	4,5
	- Mixture (SF6+nitrogen)	10,2 2,5+0,4 6+2,5
Seismic stability, points, as per MSK-64 scale	9	
Transformers weight, kg	450	700

¹⁾ Three values of rated primary current due to switching-over on primary winding..
²⁾ Secondary windings can have taps necessary for required value of rated primary current.
³⁾ When switching current transformer at minimum CT ratio, peak withstand current is up to 64 kA, short-time withstand current is up to 25 kA.
⁴⁾ When switching current transformer at medium CT ratio, peak withstand current is up to 80 kA, short-time withstand current is up to 31,5 kA.
⁵⁾ When switching current transformer at maximum CT ratio, peak withstand current is from 102 up to 160 kA, short-time withstand current is from 40 to 63 kA.



Sf6 TOGF 110, 220 current transformer

Intended use

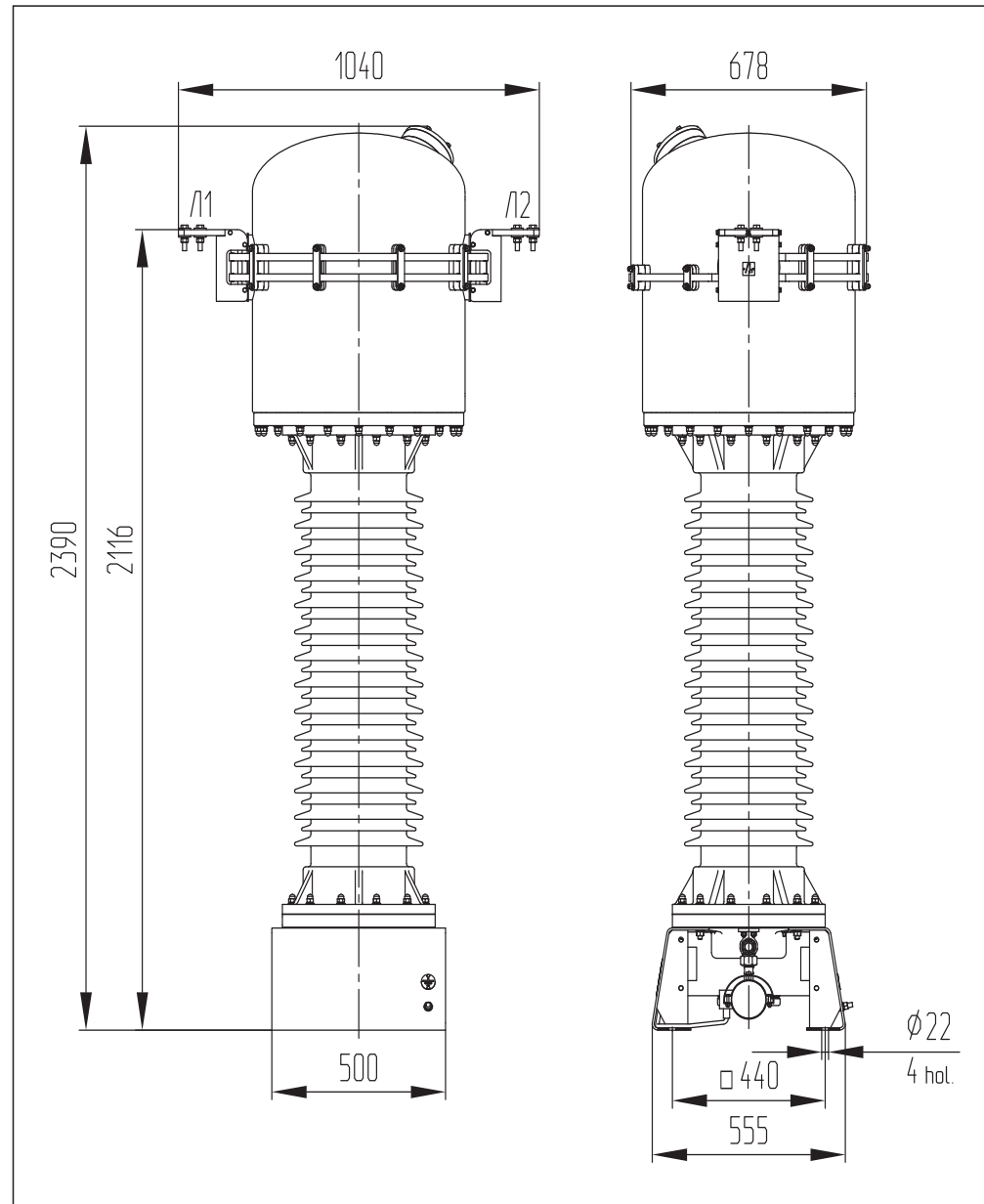
Current transformers of TOGF-110, 220 series are designed for signal transfer of measuring data to measuring devices and safety and control devices in outdoor and indoor switchgears of alternative current with 50Hz frequency for 110 kV rated voltage.

Design features

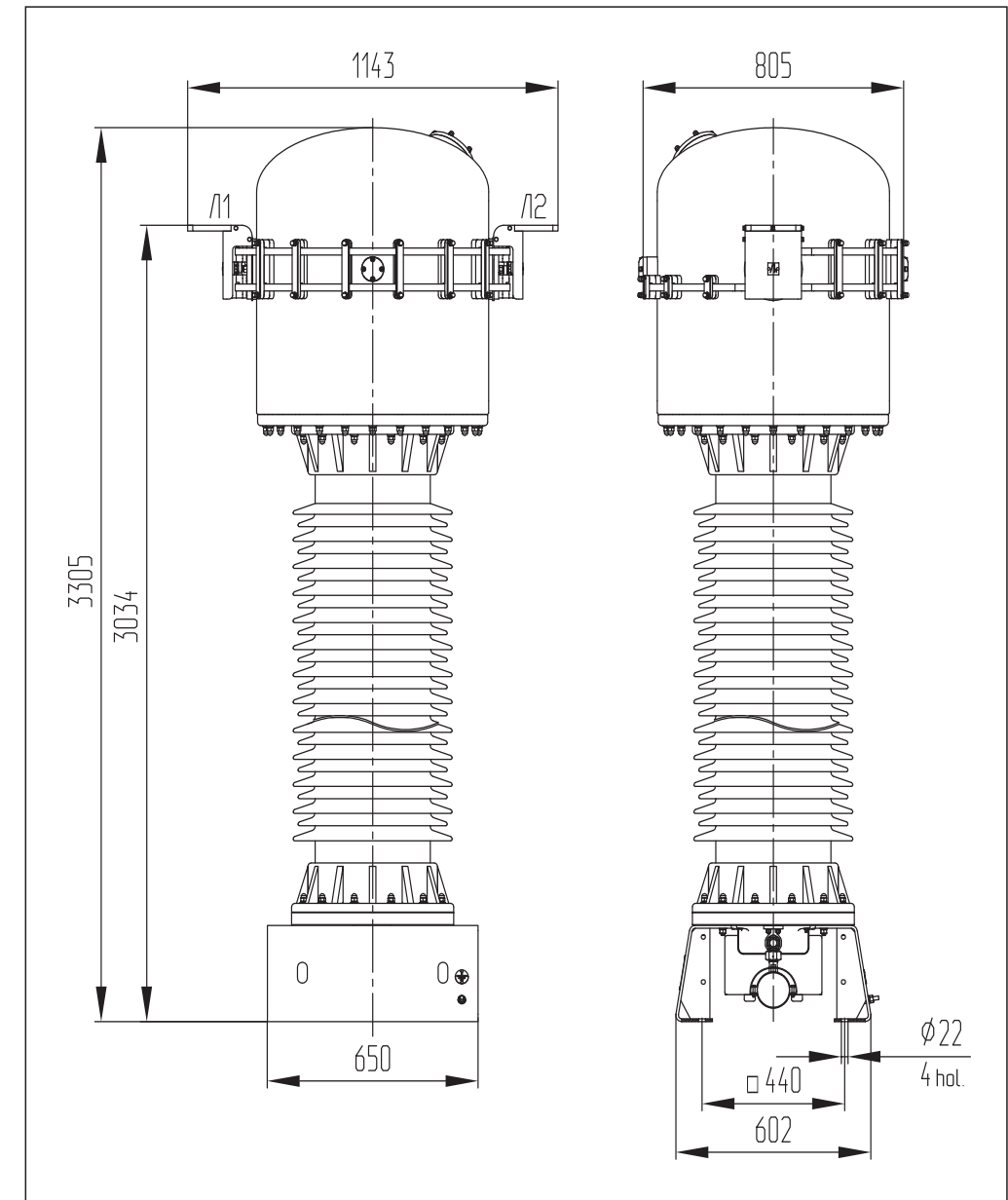
- ⚡ Current transformer is of explosion-proof version that is provided by a protective device.
- ⚡ Current transformer is of fire-proof version that is provided by incombustible materials and incombustible inert gas applied in the construction.
- ⚡ Using SF6 insulation with low leakage level.
- ⚡ Reliable seals providing product's tightness, at low ambient temperatures as well.
- ⚡ Current transformer's steel parts and support metal structures have reliable long-term coatings of hot-dip galvanizing no less than 100µm.
- ⚡ Providing parameters required by customer.
- ⚡ Application of reliable component parts.
- ⚡ Current transformers can be supplied as per order with a frame for three transformers or with support pillars.
- ⚡ Limit of permissible variation of the secondary winding for AMIS EPFA (accuracy class 0,2S and 0,5S) is kept under volume of the primary rated current 200%.

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Overall, Installation and Coupling Dimensions of TOGF-110



Overall, Installation and Coupling Dimensions of TOGF-220



Operating conditions

- ⚡ Current transformer is intended for operation in macroclimatic regions with temperate and cold climate (climatic category U1 and UKHL1 as per GOST 15150), herewith:
 - upper operating value of ambient temperature is plus 40°C,
 - lower operating value of ambient temperature:
 - for TOGF – 110 UKHL1* - minus 55°C;
 - for TOGF – 110 UKHL1 – minus 60°C;
 - for TOGF – 220 U1 – minus 45°C;
 - for TOGF – 220 UKHL1 – minus 60°C,
 - altitude is no more than 1000 m.
- ⚡ Mechanical load from wind with speed up to 40m/s and from wires' tension in vertical direction to terminals' plane is 1000N (100 kilogram-force) and horizontal direction in terminals' plane is 1000N (100 kilogram-force).

Symbolic designation

TOGF - X - X₁ - X/X - X₂ - X₃ - X₄/X₅ X₆

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|--|---|
| T | - Current transformer; |
| O | - Of support version; |
| G | - Gas-filled; |
| F | - With porcelain housing; |
| X | - Rated voltage, kV; |
| X ₁ | - Degree of insulation pollution as per gost 9920 standard; |
| X/X | - Classes of accuracy of secondary windings; |
| X ₂ -X ₃ -X ₄ | - Rated primary currents, A; |
| X ₅ | - Rated secondary current, A; |
| X ₆ | - Climatic version and arrangement category as per gost 15150 standard. |