

Main technical characteristics

Parameter	Norm	
Rated voltage, kV	500	
Maximum operating voltage, kV	525	
Testing power frequency voltage, kV	680	
Testing switching surge voltage, kV	1230	
Testing voltage of full lightning impulse, kV	1550	
Rated frequency, Hz	50	
Rows of rated primary currents I_{rat} , A (design versions)	200-400-800 300-600-1200 400-800-1600 500-1000-2000 750-1500-3000	
• of current transformers with a possibility to change a number of coils in primary winding		
• of current transformers without a possibility to change a number of coils in primary winding	800; 1000; 1200; 1500; 2000; 3000; 4000	
Rated secondary current (versions), I_{2rat} , A	1 and/or 5	
Наибольший рабочий первичный ток I_{pp} , A	GOST 7746	
Number of secondary windings	- for measuring and record	1; 2
	- for protection	3; 4; 5
Accuracy classes of secondary windings for measuring	0,2 S; 0,5S; 0,2 0,5	
Accuracy classes of secondary windings for protection	5P; 10P	
Rated secondary load at $\cos \varphi=0,8$, VA	3; 5; 10; 15; 20; 30; 50; 60; 75; 100	
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, $K_{s,rat}$	5; 10; 15	
Short-time withstand current, I_t , kA	25 ³⁾ , 31,5 ⁴⁾ , 40 ⁵⁾ , (63)	
Peak withstand current, I_D , kA	64 ³⁾ , 80 ⁴⁾ , 102 ⁵⁾ , (160)	
Duration of short-time withstand current, s	3	
Maximum apparent charge of single partial discharge, pC	10	
Gas leakage per year, % from gas mass, no more	0,5	
Seismic stability, points, as per MSK-64 scale	9	
Average life time, years, not less than	40	
Rated pressure of gas filling at temperature 20° C, MPa abs	U1 0,5	UHL1 0,6
Weight, kg	1160	

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 102(160) kA, short-time withstand current is 40(63) kA.



Gas-insulated current transformer TOGP 500

Intended use

Gas-insulated current transformers of TOGP-500 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 500 kV rated voltage.

Current Transformer provides

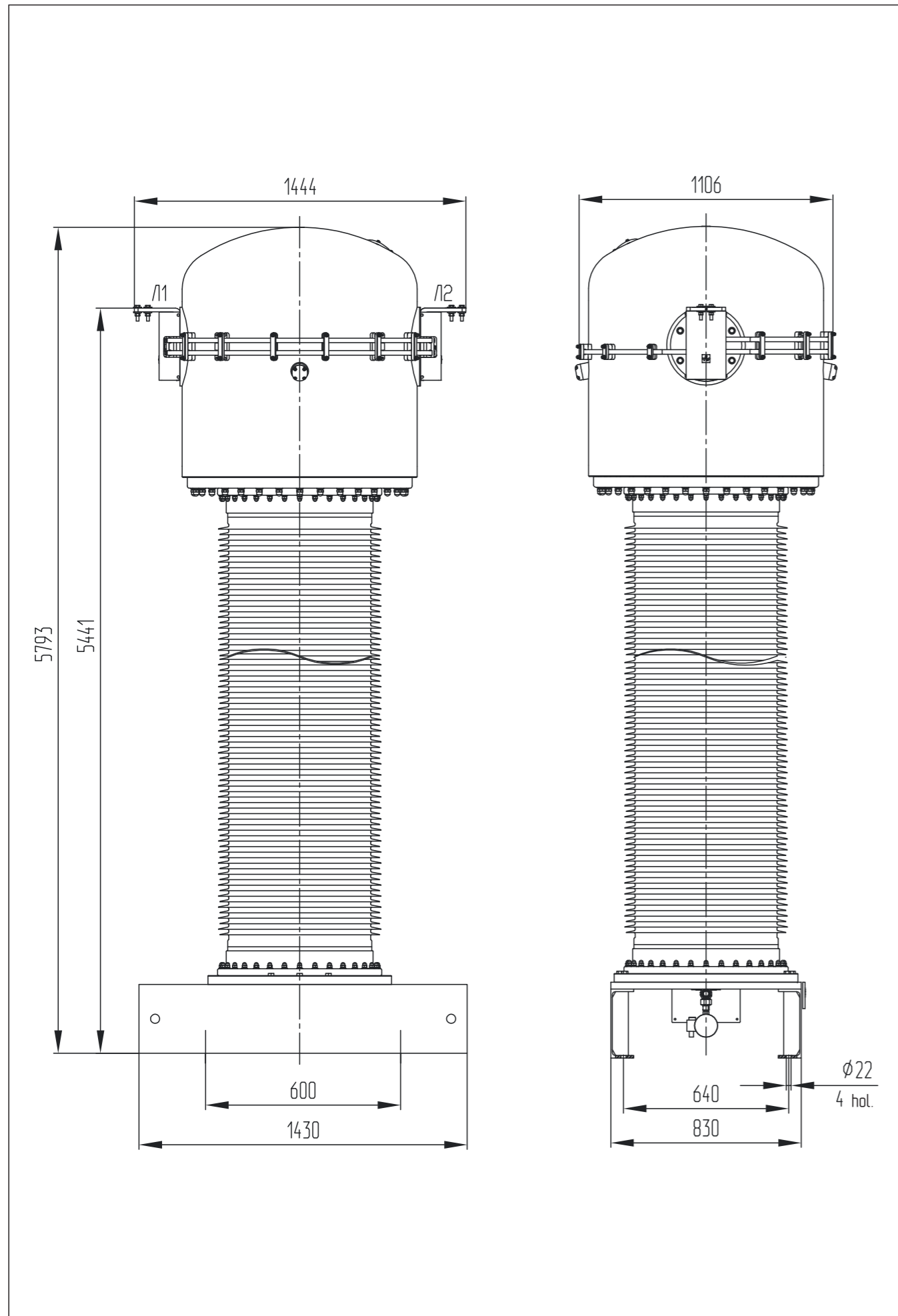
- ⚡ Proportional transformation of alternative current in high-voltage circuit into current, acceptable for direct measurement by means of standard measuring protective devices.
- ⚡ Insulation of measuring equipment and safety devices that are accessible.

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Overall, Installation and coupling dimensions



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:

- ⚡ Ambient temperature operating range:
 - upper operating value of ambient temperature is plus 40°C,
 - lower operating value of ambient temperature for U1 is minus 45°C,
 - lower operating value of ambient temperature for UKHL1 is minus 60°C.
- ⚡ Altitude is no more than 1000m.
- ⚡ Mechanical load from wind with speed up to 40m/s and from wires'tension:
 - in vertical plane down is 1500N (150 kilogram-force),
 - in horizontal direction in terminals' plane is 1500N (150 kilogram-force).

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 materials and incombustible inert gas applied in the design.
- ⚡ Application of SF6 insulation.
- ⚡ Reliable seals providing product's tightness, low level of leakages at low ambient temperatures as well.
- ⚡ Application of current transformer's steel parts and support metal structures with reliable long-term coatings of hot-dip galvanizing no less than 100µm of thermodiffusion zinc .
- ⚡ Providing parameters required by the customer.
- ⚡ Application of reliable component parts.
- ⚡ Current transformers can be supplied as per order with a steel structure of the required height.
- ⚡ Current transformer is practically of maintenance-free.

Symbolic designation

TOGP - X - X₁ - X/X - X₂ - X₃ - X₄/X₅ X₆1

- T - Current transformer;
- O - Of support version;
- G - Gas-filled;
- P - Polymeric insulation;
- X - Rated voltage, kV;
- X₁ - Degree of insulation pollution as per GOST 9920 Standard;
- X/X - Classes of accuracy of secondary windings;
- X₂-X₃-X₄ - Rated primary currents, A;
- X₅ - Rated secondary current, A;
- X₆ - Climatic version and arrangement category as per GOST 15150 Standard;
- 1 - Placement category as per GOST 15150 Standard.