

# Technical parameters

Parametr	Norm
Rated voltage, kV	110
Maximum operating voltage, kV	126
Rated frequency, Hz	50
Rated primary current I , A 1H Ohm - of current transformer with transformation ratio over-switching at primary side <sup>1)</sup>	150 - 300 - 600 200 - 400 - 800 300 - 600 - 1200 400 - 800 - 1600 500 - 1000 - 2000
- of current transformer without transformation ratio over-switching at primary side	50 - 4000
Rated secondary current I , A	1 and 5
Accuracy class of measuring auxiliary windings	0,2S; 0,5S; 0,2; 0,5
Accuracy class of protection auxiliary windings	5P; 10P
Rated secondary load at cos =0,8, VA	from 3 to 100
Maximum operating primary current, A	GOST 7746
Number of secondary windings	up to 7
Rated extreme ratio of protection auxiliary windings, K	frjm 10 to 40
Rated protection coefficient of measuring and registering devices of auxiliary winding	from 5 to 15
Short-time withstand current, kA	to 63
Rated peak of short-time withstand current, kA	to 160
Duration of short-time withstand current, s	3
Rated excessive gas pressure at 200C, MPa (kgs/cm <sup>2</sup> )	10 - 40
Annual gas leakage, % of gas mass, not more	0,5
Maximum apparent charge of single partial discharge, pC, not more	10
Seismic ability, points at MSK scale	9

<sup>1)</sup> Three values of the nominal primary current due to the switching on the primary winding.

<sup>2)</sup> The number and type of windings may vary according to customer's requirement.



## Current transformer 110 TOGF with nitrogen insulation

### Intended use

TOGF-110 current instrument transformer is intended for transmitting measuring information signal to measuring devices and protection and control devices in open and closed a.c. switchyards (50Hz and 110kV).

### Advantages

110kV nitrogen current instrument transformer has the following main advantages:

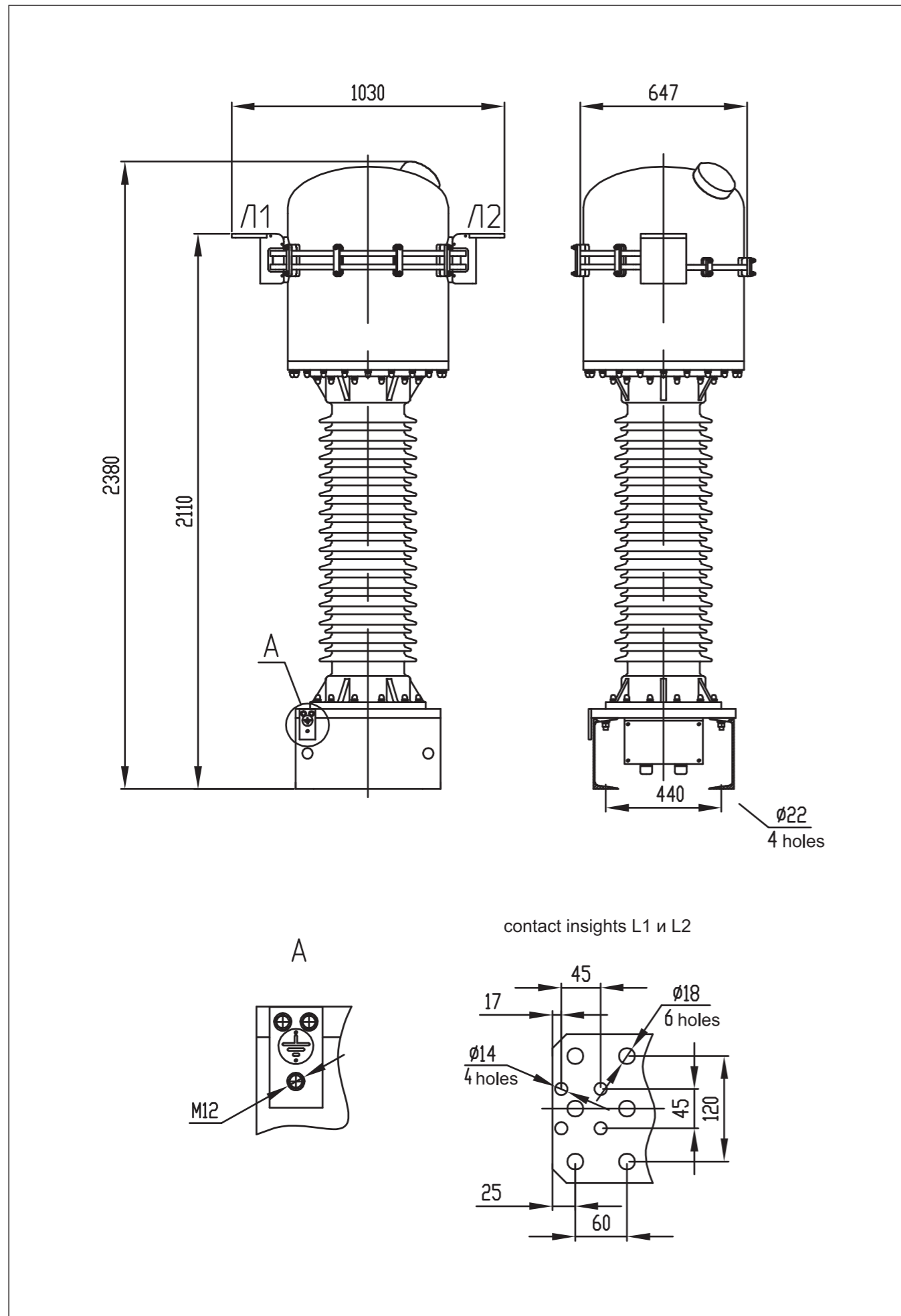
- ⚡ increased fire-proof ratio,
- ⚡ operation in low temperatures,
- ⚡ in emergency situations no hazard poison gases are emitted,
- ⚡ no special disposal is required.

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## Overall, mounting and coupling dimensions



## Operating conditions

The current transformer can be operated in regions with mild and cold climate (climatic type U1 and UKHL1, correspondingly, according to GOST 15150), in the following conditions:

- ⚡ Operating range of ambient air temperatures:
  - upper operating value of ambient air temperature: plus 40°C;
  - lower operating value of ambient air temperature:
    - for TOGF - 110 UKHL1\* series - minus 55°C.
    - for TOGF - 110 UKHL1 - minus 60°C.
- ⚡ Altitude – up to 1000m.
- ⚡ Mechanical load at 40m/s wind speed and at wire tension:
  - vertically to terminals - 1000 N (100 kgs),
  - horizontally to terminals - 1000 N (100 kgs).
- ⚡ Service life, at least - 40 years.
- ⚡ Warranty - 5 years.

## Design peculiarities

- ⚡ Current transformer is explosion-proof due to installed protection device.
- ⚡ Current transformer is fire-proof due to non-combustible materials and non-combustible inert gas.
- ⚡ Insulation is performed with nitrogen with low leakage rate.
- ⚡ Application of reliable sealings ensuring transformer's tightness even while operating in low temperatures.
- ⚡ Application of reliable long-lasting coatings for transformer's steel parts and for post metal structures through hot dip galvanizing method (coating thickness at least 100 $\mu$ m).
- ⚡ Ensuring all parameters at customer's request.
- ⚡ Application of reliable components.
- ⚡ At customer's request current transformer can be supplied with a frame for three transformers or with support pillars.
- ⚡ The limit of admissible error of auxiliary windings for AIIS KUE (for 0,2S and 0,5S accuracy classes) is 20% for initial rated current value.
- ⚡ Gas insulation with high-frequency nitrogen, 1st class under GOST 9293.

## Designation

TOGF - X - X<sub>1</sub> - X/X - X<sub>2</sub> - X<sub>3</sub> - X<sub>4</sub>/X<sub>5</sub> X<sub>6</sub>

- T - Current transformer;
- O - Post;
- G - With gas insulation;
- F - With porcelain bushings;
- X - Rated voltage, kV;
- X<sub>1</sub> - Insulation pollution degree under GOST 9920;
- X/X - Accuracy class of secondary windings;
- X<sub>2</sub>-X<sub>3</sub>-X<sub>4</sub> - Rated primary currents, A;
- X<sub>5</sub> - Rated secondary current, A;
- X<sub>6</sub> - Climatic type and installation category under GOST 15150.