



TECHNICAL SPECIFICATION STANDARD CURRENT TRANSFORMER

I. SCOPE

This technical specification covers IPTO' s requirements regarding design features, technical characteristics as well as tests for the standard current transformer commission.

II. KEY WORDS

Current transformers, instrument transformers, measurement transformers.

III. STANDARDS

The current transformers shall conform to the existing international practice and regulations.

IV. USE

The standard current transformer will be used for IPTO' s laboratory requirements as well as for test and measurement requirements in IPTO' s transmission substations.

Operating conditions

1. Limits of operation temperature: 10°C to 35°C
2. Altitude: Up to 1000 m above sea level.

V. REQUIRED DESIGN CHARACTERISTICS OF STANDARD CURRENT TRANSFORMER

1. Construction of standard current transformer

The standard current transformer will have a robust construction and the possibility of operating in roofed areas for laboratory measurements as well as in open air areas for measurements in IPTO' s transmission substations. All possible controls and connections for ratio change will stand on the upper or adjacent side of the standard current transformer and in a suitable position, so that the cables connection can be easy. For large currents, measurements with a passing cable with a possibility of up to two (2) coils are also acceptable. The standard current transformer will also bear to the lower side four wheels of suitable cross section and resistance for its movement inside the laboratory and handles for its transfer in open air areas.

2. Secondary windings

The nominal current of the secondary winding will be selectable between 1 and 5A. The terminals of the secondary winding will be suitable for connection with conductors of cross section 10 mm².

Burden of winding: at least 5VA.

3. Primary winding

The terminals of the primary winding will stand on the upper side of the standard current transformer, will have a suitable cross section, robust construction and indelible marking. Besides, if the measurement takes place with a passing cable, the diameter of hole will be ~100mm.

4. Ratios of primary

α. 50 – 100 – 200 – 400 – 500 – 600 – 800 – 1000

β. 1200 – 1250 – 1500 – 1600 – 2000 – 2400 – 2500

For a better management of tests two (2) separate standard current transformers are also acceptable, the former with the ratios of 4.α and the latter with the ratios of 4.β. The two (2) standard current transformers will be regarded as being an undivided complex.

5. Accuracy

0.5-1.2% $I_N \pm 0,01\%$

Phase deviation: $\pm 0,5\text{min}$

Frequency: 48 to 52Hz

Burden: 5VA & $\cos\phi: 0.8-1$

6. Earthing

For the earthing of the standard current transformer and the secondary winding there will be suitable terminals.

7. Metal parts

With the exception of the primary and secondary terminals, all other metal parts must be either from hot-dip galvanized steel or non-corrosive metal.

8. Accessories

Protective housings of terminals and controls for the transfer of the standard current transformer.

VI. TESTS

1. Verification of terminal markings.
2. Power-frequency withstand test on primary and secondary winding.
3. Measurement of ohmic resistances.
4. Accuracy tests in all positions of the primary and secondary winding in different operation temperatures and frequencies.

VII. MARKINGS

1. Terminals – Controls Markings

Readable and indelible terminal and control markings of the primary and secondary winding.

2. Plate Markings

The standard current transformer will bear a plate from a non-corrosive material with the following markings:

- Manufacturer's name.
- Serial number, type, year of construction.
- Rated short-time thermal current.
- Operation frequencies.
- Rated insulation level.
- Rated primary and secondary currents.
- Rated output power and the corresponding accuracy class for the secondary windings.

VIII. SUBMITTED DATA BY BIDDERS

1. All bidders will have to supply all data requested by the Technical Specification.
2. Technical leaflets and generally any technical information related to the offered standard current transformer, which will help the technical evaluation process.
3. Detailed technical drawings of the offered standard current transformer. In the drawings will also appear the terminals with their markings as well as plate markings.
4. Any routine test certificates including the detailed accuracy test certificate of all windings.

Failure on bidder's part to comply with these requirements will be regarded as being a sufficient reason for the rejection of the offer.

IX. PACKING

The standard current transformer shall be delivered in a closed and robust packing, of pallet type with a strengthened base.

X. GUARANTEE - CALIBRATION

The supplier will provide a guarantee of " Good Operation and maintenance of characteristics " for a duration of at least five (5) years from the date of delivery.

The standard current transformer will be accompanied by the routine test certificates as well as the detailed accuracy test certificate of all windings by an independent laboratory, which will be accredited according to ISO 17025.