

## PRIMARY WINDING

Primary winding is of braided electrolytic copper conductor with double cotton covering. Varnished fibreglass sleeve is provided as an additional insulation on this conductor. In case of live tank construction, the primary is wound on insulated secondary. The primary is positioned properly to sustain dynamic forces developed during short circuit condition. In case of Dead Tank construction, the primary is encapsulated in circular rigid fibre glass ring and aluminum pipe to form EYE BOLT construction.

## INSULATION

High quality crepe insulating paper is used to build up main insulation of the CT. In live tank design, insulation is built up on secondary core and secondary leads are brought out through a metallic galvanised pipe. In Dead Tank CT primary Winding is encapsulated in fibre glass ring and Aluminum pipe. Main insulation is built up on primary winding (Paper condenser is formed on the pipe) with fine grading of insulation. Semiconducting shield is used to give linear distribution of Electric stress along the length of the bushing the paper insulation is dried in oven under very high vacuum and strictly controlled conditions. Filtered and de-aerated EHV Grade oil is filled in CT while CT is under vacuum. To seal it, the space left for expansion on the top is filled with dry and pure nitrogen through non-returnable valve at pre-determined pressure.

## PORCELAIN INSULATOR

Brown Glazed porcelain bushings with different shed profiles to suit different pollution conditions are used. These Bushings are hollow cylindrical type conforming to IS 5621/IEC 60044-1

Bushings with Collar at both the ends are clamped using Aluminum Flange. Nitrile and Neoprene Gaskets are used at both sides of collar to form flexible joint. This joint can sustain vibrations without damaging bushing. Bushings with cemented flanges are also used.

## TANK & BASES

Top tank (which also acts as oil Expansion Chamber) of the CT having current less than 1200 Amps. are made of MS sheet. Stainless Steel Tanks are used for CTs with primary current of 1200 Amps and above. Bases are fabricated from MS Plates and Channels. All MS Tanks and Bases are painted with oven baked paint, after cleaning by seven tank process. All surfaces which come in contact with oil are painted with oil Insoluble Paint. All MS parts can be supplied Hot Dip Galvanised on request.

## TESTING

Our Testing Lab is equipped with modern test facilities to carry out all routine tests including temperature rise test. Partial Discharges test plays vital role in quality control of insulation. All our CTs are tested for Partial Discharge on most modern bridge type Partial Discharge Test Set. All the CTs pass through a standardized quality assurance plan to ensure requisite top quality at every stage and in the final product..

## PACKING & TRANSPORTATION

All CTs are packed with strong jungle wood to take care of most adverse conditions of transportation all over the country. Special Sea-worthy packing is done for the CTs for EXPORT. All CTs upto 145kV Class are packed to transport vertically. 245 kV Class Cts are transported horizontally.

## MAINTENANCE

The CTs do not require maintenance apart from occasional cleaning of Bushings and checking of Nitrogen pressure. For more details refer Instruction Manual supplied with the CT.

## HOW TO SELECT THE C.T.

It is important to specify correct parameters of CT while ordering for optimum design. Following are main factors for selecting current transformer.

### 1. Service Voltage :

System Voltage is which CT is to be installed e.g. 11 kV, 22 kV, 33 kV. etc.

### 2. Installation :

Whether OUTDOOR or INDOOR

### 3. Atmospheric Conditions :

Such as condition of Pollution, Altitude Ambient Temperature etc.

### 4. Insulation Level :

If insulation level other than associated with service voltage is required, it should be specifically mentioned

### 5. Rated primary current :

Specify rated primary current / currents (if required more than one value) Also indicate if different primary current is required for different cores.

### 6. Continuous Primary current :

Max. primary current that can be withstood continuously by current transformer e.g. 120% of primary current.

### 7. Rated secondary current :

Whether 1 Amp or 5Amps

### 8. Short Time Current & its Duration :

Specify fault current of the system in which CT is to be installed along with its duration. It is most important to specify realistic value of S.T.C. as at lower primary current, higher S.T.C. value necessitates bulky & costlier design. Also specify dynamic current if other than 2.5 times S.T.C. is required.

### 9. No. of cores Their Burdens Accuracy :

Basis of application, No. of cores, their burdens and accuracy class should be specified. It is advisable to specify minimum required Burden for metering core as unnecessary high burden will necessitate for bulky and costlier design. Specified accuracy is guaranteed for 100% to 25% of rated burden only. Current transformer offers minimum error if 75% to 60% burden is connected to secondary. Therefore, ideally rated burden higher than 1.5 time actual burden should be specified.