



UNITED ELECTRICALS & TRANSFORMERS

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INTRODUCTION

A transformer is basically an electromagnetic static equipment based on the principal of Faraday's law of electromagnetic induction. It consists of a magnetic core build-up of insulated silicon steel lamination, on which are wound sets of coils suitably located with respect to each other & termed as Primary & Secondary windings.

We are the only manufacturer in Uttaranchal State of the distribution, medium & power transformers of various ratings and located at Roorkee (Uttaranchal).

Our major customers are Government utilities like State Electricity Boards/ Corporations, different Development Authorities, Steel Plants, Rice Mills, Paper and Chemical Industries, Sugar Mills, Bottling Plants, Glass Manufacturers, etc.

QUALITY POLICY

With hands in hands of each and every employee, Executive or shopman we are continuously in progress of designing better and better towards the best quality of transformers as per the requirements of our esteemed customers.

OUR PRODUCTS

- Power & distribution transformers from 10 KVA to 3000KVA and voltage class upto 33 KV.
- Furnace transformers.
- Low loss transformers.

SPECIAL FEATURES OF OUR PRODUCTS

- Core lamination/Conductor/Oil/MS sheets used of best quality.
- Can be operated continuously with maximum efficiency.
- Can be overloaded suitably as per Indian Standards.
- Design & testing as per Indian & International Standards.
- Transformers Type tested for short Circuit & impulse Voltage with Standard Test.

CORE LAMINATION

- Constructed from cold rolled, grain oriented, annealed laminations of electrical steel sheet.
- Losses are reduced to minimum possible level for better efficiency & low line losses.
- Before using in transformer, quality check like Epstein square test, insulation resistance, bending etc. are performed regularly.
- In all our transformers core joints are mitted for better magnetizing path providing minimum reluctance.
- In-house facilities available like shearing, punching, notching & debarring for better quality.
- Special care is taken while processing to reduce burrs & minimum stresses.
- Special frame is built in-house for clamping the core with heavy steel structures using bright material tie rods & core rods to reduce the magnetic noise as well as making the whole structure rigid and robust.

COILS/WINDINGS

- Coils are wound from annealed electrolytic grade Copper/Aluminium conductor and wire/strips covered with cotton, paper, or enameled.
- In-house facility for wire drawing & also for paper covering.
- Copper/Aluminium rods are procured directly from manufacturers in bulk quantities from Sterlite, Nalco, Hindalco, Balco, etc.
- Japanese Kraft paper is used for covering/insulating the conductors and if Indian that to only of ITC, Triveni & Ballarpur.
- To reduce temperature rise of windings, oils & hot spot, all possible cooling arrangement are provided as per Indian standards.
- Facilities for windings of all types of coils like Helical, continuous, disc double disc, crossover etc. is available depending upon the rating & voltage class of the transformers, as per requirement of the customers.

CORE COIL ASSEMBLY

- Electrical grade Kraft paper, Pre-compressed boards, pressboard, prespan etc. procured from Raman, Senapathy, etc is used for insulation.
- Taking care of Short Circuit forces & impulse voltage all clamping structures, ducts etc. are designed accordingly.

- Maximum possible insulation resistance as per Indian standards is attained by drying in the oven.

TEMPERATURE RISE

All transformers are designed for a maximum temperature rise of 40/50°C of oil/winding. Low temperature rise can be obtain on request.

TAPPINGS

- OFF LOAD TAP CHANGER provides tapping from +2.5% to -7.5% in steps of 2.5% for HV variation or as per customer's requirements.
- 16 step ON LOAD TAP CHANGER for HV variation from +5% to -15% in steps of 1.25% or as per specific requirements.

OIL

- The transformer oil is a mineral oil which provides better insulation & cooling. Heat generated in core & coils transformed to the oil by methods of conduction.
- Oil is procured from reputed manufacturer like SAVITA & APAR ONLY.
- Oil is tested for resistivity, dielectric & acidic characteristic conforming to IS - 335.
- Before topping up of oil it is filtered thoroughly.

TANK

- Tank are fabricated in-house of M.S. steel sheet/plates with adequate bracing & stiffeners.
- Tank are pressure & vacuum tested to withstand of inside or outside pressures.
- All the external /internal surfaces of tank are given a primary coat of zinc chromate & red oxide. Externally two finishing coats of grey paint are given.

STANDARD FITTINGS

1. Oil level gauge with toughened glass with max, are and min. marking.
2. Oil conservator
3. Air release plug.
4. Silicagel air breather.
5. HV/LV terminals-outdoor bushings.
6. Radiators - PSR (Pressed Steel Radiators)
7. Drain-cum bottom filter valve with plug.
8. Thermometer pocket.
9. Oil temperature Indicator
10. Off load tap switch (for 250 KVA & above).
11. Explosion vent with diaphragm (for 160 KVA & above)
12. Bi-directional flat rollers (for 250 KVA & above)
13. Earthing terminals.
14. Diagram and Rating plate
15. Pairs of Arcing Horns.

QUALITY CONTROL AND ROUTINE TESTS

The quality of transformers depends on the success of the 3M's which are as :

- Men: Skilled workmen.
- Machines: Machines being used in the manufacturing of transformers.
- Materials : Quality of materials used.

Each and every transformer is designed by our expert design team, satisfying the requirements of our esteemed customers. We have been effortlessly doing R & D to upgrade the technology & quality of our products.

All transformers undergo rigorous quality control checks and are routine tested as per IS-2026 in our fully equipped laboratory, instruments of which are yearly calibrated.

TYPE TEST FOR SHORT CIRCUIT & IMPULSE

- Our transformers are type tested for short circuit and impulse at CPRI-Bhopal, NTH-Ghaziabad & ERDA - Vadodra, or as per customer requirement.

OUR IMMEDIATE CONCERN

- Provides best pre-sales & post sales services to all our customers.
- Deliver the supply orders timely.
- Build up corporate image as a quality conscious & Socially responsible transformer manufacturing company.