



Power Technology Perfect & Precise

# & POWER DISTRIBUTION TRANSFORMERS

- ◆ Power
- ◆ Distribution
- ◆ Step-up
- ◆ Step-down
- ◆ Ultra Isolation
- ◆ Isolation Furnace
- ◆ Converter Duty
- ◆ Scott Rectifier
- ◆ Lighting-cum-Isolation
- ◆ Dry Type
- ◆ Dual Ratio
- ◆ Special Type



**Indian Transformers and Electricals Pvt. Ltd.**  
**Gurgaon**

## Standard

Transformers conform to IS:2026,BS:171,IEC:76 (or as per specific requirement, if any)

## System of Supply

Phases: 3 / 1 phase. Frequency: 50 Hz

Primary : 3.3 / 6.6 / 11 / 22 / 33 KV earthed system.

Secondary : 433/415V. (or as per specific requirement, if any)

## Rating & Capacity

Suitable for continuous rating upto it's full capacity. Over loading as per IS:6600 or equivalent. Available upto 10 MVA capacities.

## Type

Naturally Oil Cooled (ONAN) type suitable for outdoor / indoor installation, double wound, 3 phase core type & comply with the requirements of IS: 2026

## Impedance

The percentage impedance at rated current and principal tapping at 75°C conforms to IS: 2026 or as per specific requirement, if any.

## Connections & Vector Group

'Delta' on high voltage side & 'Star' on low voltage side with neutral terminal brought out for solid earthing corresponding to the vector group symbol Dyn 11 as per IS: 2026 part IV or as per specific requirement, if any.

## Temperature Rise

Continuously for full load, temperature rise not exceeding 50°C by thermometer in oil & 55°C by resistance (winding), over a max. ambient temperature of 50°C. or as per specific requirement, if any.

## Tappings

Tapping on HV side with a range + 5% to -5% in steps of 2.5% each operated by an off circuit tap switch to vary High Voltage.

Transformers with On Load Tap Changer (OLTC), RTCC & AVR are also available (on and above 315 KVA) with a range +5% to -15% in steps of 1.25% each.

Other range of taps can also be provided as required & agreed upon.

## Losses

No load losses & full load losses are as per IS specifications wherever applicable or as per our guaranteed technical particulars.

## Terminals Arrangement & Bushings

A choice of four terminal arrangements is available:

- HV Bare Bushings - LV Bare Bushings
- HV Bare Bushings - LV Cable Box/ Bus Duct
- HV Cable Box - LV Bare Bushings
- HV Cable Box - LV Cable Box/ Bus Duct

The bushings conform to IS: 3347,2099.

LV & HV disconnecting chambers can also be provided on cable boxes (Optional)

## Cooling

Natural cooling by means of Elliptical tubes/PSR Radiators/Corrugation

## Magnetic Circuits Core

High Grade Low Loss CRGO Silicon laminations

## Windings

Material used is of electrolytic grade paper/synthetic enamelled covered Copper / Aluminium conductor conforming to IS:7404, IS: 6160, IS: 6162 & IS:613.

## Bracing

Coils are axially and radially supported to prevent deformation under short circuit. Adequate axil strips, end blocks, number of spacer rows, number of anchoring and bracing tapes are judiciously selected.

## Transformer Oil & Insulation

Transformer oil conforming to IS:335 is used as coolant & insulating medium. Press board, pre-compressed boards, kraft/crepe paper conform to IS:8570, IS:1576 & BS:5068 IEC:554 & IEC:641; cotton tape & cotton web tape conform to IS:1923; glass tape & glass sleeveings conform to IS:5352. Wooden insulation are of UDEL/RIDL wood.

## Tank

The material used is of mild steel welded construction conforming to IS:2062 & IS:8500 duly coated with anti corrosive primer & paint.

## Paintings & Finishes

All surfaces are thoroughly cleaned and freed from rust, scale, grease, dirt & other foreign matter, Sharp points, weld spatters, flux & other imperfections are removed. Paints & enamel varnish used conform to IS:104 & 2932.

## Gaskets & Joints

All gaskets used for making oil tight joints to be with cork as base bonded by oil resisting synthetic material or rubber. Neoprene rubber is used for oil tight joints for LV & HV Terminals. The Gaskets conform to Type RC-70 C of IS:4253 part-II.

## Duty Under Faults

Transformers are so designed that these withstand the thermal & dynamic stresses during short circuit at their terminals. The duration of fault and other calculations conform to IS: 13234.

## Standard Fittings & Accessories

The following accessories & fittings are provided as standard :

Lifting Lugs , C.I. Rollers, Explosion Vent, Air Release Plug, Arching Horn Set, Earthing Terminals, Silica Gel Breather, Oil Drain Valve with plug, Oil Filter Valve with plug, Name Rating & Diagram Plate, Oil Level Indicator (flush tube), Conservator with oil filling hole, Off circuit tap changing switch (if not opted for OLTC), Dial Type Oil Temp. Indicator (if not opted for OTI with T&A contacts)

## Optional Fittings & Accessories

HV Cable Box (without cable glands), LV Cable Box (without cable glands), LV Cable Bus Duct, HV Disconnecting Chamber, LV Disconnecting Chamber, HV & LV Connectors/Lugs, Buchholz Relay, Oil Temperature indicator with A&T contacts, Winding Temp. Indicator with A&T contacts, Pressure Relief Valve (PRV) with/without A/T contacts, Magnetic Oil Level Gauge with / without A/T contacts, Marshalling Box, AVR-Micro controller Based On Load Tap Changer (OLTC), Remote Tap Cubical Control (RTCC), Other fittings / accessories as per specific requirement, if any.

## PRODUCTS

TRANSFORMERS (OIL/DRY)

VCBs / LBS

VOLTAGE CONTROLLERS / AVRS

PANELS

COMPACT SUB-STATIONS

## APPROVALS & REGISTRATIONS

◇ E-in-C (Defence) ◇ MAP ◇ Railways ◇ BSNL ◇ MTNL & more ....



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