

**BIS Accredited
for Distribution Transformer Testing
as per IS: 1180-2014**

**ELECTRICAL RESEARCH &
DEVELOPMENT ASSOCIATION**



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ERDA is a premier autonomous organization offering Testing & Evaluation, Field Services and Research & Development and Expert Services globally to Power Utilities, Manufacturing Industries in the power sector. Our expertise is aligned across three specific verticals, the facilities for which are spread across 25 acres of land in Vadodara, Gujarat.

In its endeavor to serve its esteemed customers better and faster, ERDA has set up new state-of-the-art facilities for testing distribution transformers (33kV, 200kVA), CT/PTs up to 33 kV voltage class, high voltage impulse testing upto 300 kVp ,15kJ ,energy meters and transformer oil in service including DGA and Furan Analysis at its new laboratory at Rabale. In addition, facility for electro-thermal calibration have been setup.

All facilities have been accredited by NABL, Govt.of India & BIS Recognized for Distribution Transformer testing as per IS: 1180-2014.

Testing & Evaluation

1 Distribution Transformers (Upto 33 kV, 200 kVA)

The new laboratory is BIS accredited for complete Type Testing as per IS: 1180-2014 and is equipped to test distribution transformers for the following:

- Temperature rise test
- Lightning impulse voltage withstand test
- Measurement of winding resistance
- Measurement of voltage ratio and check of phase displacement
- Measurement of impedance voltage/short circuit impedance and load loss
- Measurement of no-load loss and current
- Measurement of insulation resistance
- Induced over voltage withstand test
- Separate source voltage withstand test
- Measurement of zero sequence impedance
- Air pressure test
- Unbalanced current test
- Magnetic balance test
- Vacuum test
- Measurement of over fluxing

Following tests will be organized from ERDA, Vadodara

- Oil leak test
- Short circuit withstand test
- Determination of sound level
- Paint adhesion test
- BDV and moisture content of oil in transformer

2 Instrument Transformers

The new laboratory is equipped to test current transformers and voltage transformers for the following.

2.1: Current Transformer: (Upto 3200A 0.05 class)

- Lightning impulse voltage withstand test
- Temperature rise test
- Verification of terminal marking and polarity
- Determination of errors according the requirements of the appropriate accuracy class
- Measurement of turns ratio
- Power frequency dry withstand tests on primary windings
- Power frequency dry withstand tests on secondary windings
- Over voltage inter-turn test
- Instrument security factor
- Composite error test
- Measurement of knee point voltage & excitation current
- Measurement of winding resistance

2.2: Voltage Transformer (Upto 33 kV 0.2 class)

- Lightning impulse voltage withstand test
- Temperature rise test
- Verification of marking and polarity
- Power frequency voltage withstand test on primary terminals
- Power frequency voltage withstand test on secondary terminals
- Test for accuracy
- Determination errors according to the requirements of the appropriate accuracy class
- One minute induced over voltage withstand test
- Separate source withstand test

3 Lightning Impulse Withstand Voltage Test Facility (300 kVp, 15 kJ Impulse Voltage Generator)

The new laboratory is equipped following Products.

- Distribution Transformers 33 kV, 200 kVA
- Current Transformers up to 33 kV
- Voltage Transformer up to 33 kV
- Insulators up to 33 kV
- Air Break Switches
- Bushings up to 33 kV
- Isolators up to 33 kV
- Circuit Breakers & Vacuum Interrupters HT Panels upto 33 kV

4 Transformer oil (As per IS: 1866, Table 2; DGA and Furan compounds)

The new laboratory is equipped carried out following test.

- Electric Strength(BDV)
- Water Content
- Specific Resistance
- Appearance
- Dielectric Dissipation Factor(Tan Delta)
- Flash Point
- Inter Facial Tension
- Density
- Sediment and Sludge
- Neutralisation Value
- Dissolved Gas Analysis
- Furan content Analysis

5 Energy Meters (as per Indian & International standards)

The following tests can be performed on all types of energy meters.

- AC high voltage & Impulse voltage test
- Insulation resistance test
- Limits of error & No load test
- Test of starting condition
- Repeatability of error test
- Test of influence quantities
- Test of effect of supply voltage
- Test of effect of self-heating
- Test of immunity to earth fault
- Test of influence of heating
- Meter constant & Power Consumption
- Tamper and fraud tests & Jammer test

In addition, calibration of energy meters upto class 0.05 is also done.

6 Calibration Services

ERDA has sophisticated setup for Electro technical calibration. The scope of products include Multi Meter, Clamp Meter, Power Analyser, Power Meter, BDV Kit, HV Tester, Energy Meter & CTPT calibration.

