



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION



SWITCHGEAR LABORATORY

(Test facility for range of LV, MV & HV Switchgear products under one roof)

Electrical Research and Development Association (ERDA) is a not for profit autonomous organization offering its services under three verticals namely Testing and Evaluation, Field Services and R&D and Expert Services to Power Utilities, Process Plants and Manufacturing Industries.

As the response time of switchgear products in case of abnormalities are key to safeguard the electrical network and connected equipment in circuit, it is important that every switchgear product should be tested for its performance evaluation. The basic objective of such testing is to verify the design & performance and to verify that the switchgear product has been manufactured as per recommendation & requirements of relevant standards. In light of the above, ERDA has established following automated test facilities for type testing of switchgear products as per various national and international standards.

TESTING AND EVALUATION

Key Test Capabilities at a Glance:

- India's largest online short circuit test facility up to 120kA, 575V for 1 Sec
- Impulse testing up to 1600kVp, 80kJ
- 4 parallel computerized test bays for temperature rise test for 5kA, 10kA & 20kA
- Asia's largest IP test facility with a payload capacity of 40 Ton, 6.8m x 5.8m x 5.0m
- Computerized environmental test chambers with the range of -40°C to + 180°C of size 850mm x 1150mm x 950mm & 350mm x 450mm x 450mm
- Facility for distribution switchboards with 16 outgoing feeders
- 10 meter semi anechoic chamber having shielding effectiveness from 10kHz to 40GHz & turn table capacity up to 3000kg
- Computerized single & three phase relay testing facility
- IEC 61850 communication protocol testing for IEDs
- Electrical endurance test setup (Making & Braking setup of upto 2.5kA, 415V)
- Mechanical endurance test setup for HT circuit breaker up to 145kV class
- Partial discharge facility upto 220kV products

FIELD SERVICES

- Relay accuracy testing (pickup, dropout & IR measurement)
- Onsite witness testing of mechanical endurance test on SF6 breaker (above 145kV)
- Substation automation system testing as per IEC 61850
- Protection audit



India's largest online short circuit test facility



IP Test Facility with payload capacity of 40 MT

RESEARCH & DEVELOPMENT AND EXPERT SERVICES

Switchgear related technologies developed by ERDA

Fault Current Limiter (Patent Granted)

- To reduce the fault current during short circuit
- Application in MCBs, ELCBs, SCPPs etc.

Silver Tin Oxide Contact Material using Nano-Technology for LV Switchgear (Patent Filed)

- To reduce content of Silver in Silver based alloy, composition of Silver (86%) and Tin Oxide (14%) have been developed by ERDA
- Application in MCBs, Contactors and ELCBs

Silver Nano Carbon Contact Material Technology for LV Switchgear (Patent Filed)

- To provide higher hardness and conductivity in comparison with conventional contact material
- Application in MCBs, Contactors and ELCBs

LABORATORY ACCREDITATIONS / RECOGNITIONS

- National Accreditation Board for Testing & Calibration Laboratories (NABL), Govt. of India
- UL, India
- CARAT, TÜV-PS (Germany)
- Bureau of Indian Standards (BIS, Govt. of India)
- Intertek Testing and Certification (ASTA), UK
- Abu Dhabi Water & Electricity Authority (ADWEA), Abu Dhabi
- Tenaga Nasional Berhad (TNB), Malaysia

PRODUCTS EVALUATED

- | | | | |
|---------|-----------|-----------|-------------|
| • MCB | • RCCB | • RCBO | • Bushing |
| • Relay | • LTDB | • Fuse | • Contactor |
| • VCB | • SF6 GCB | • RMU | • Starter |
| • GIS | • Panel | • Busduct | |



Mechanical Endurance Testing



Relay Testing Facility



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