

## **Technical Specifications for Digital Insulation Tester – 5KV Model**

### **A: SCOPE:**

This specification covers Design/Engineering, manufacture, testing & calibration as well as supply & delivery of Digital Insulation Tester (5 kV) suitable for measuring insulation resistance, DAR, PI in live /running Switchyard as per applicable standard & testing procedure. The offer for supply should include all accessories even though not specifically mentioned but which are essential for complete & satisfactory operation. The instrument shall be portable, light weight with internal chargeable battery. Type test from NABL/ILAC should be submitted by the bidder (inhouse or factory test report shall not be considered).

### **B: SPECIFICATION**

1. Insulation Tester should be suitable for application in:
  - a. Insulation testing of EHV Power Transformers at charged Switchyard.
  - b. Insulation testing of EHV underground Power Cables.
  - c. Insulation testing of EHV switchgears within charged Switchyard.
  - d. Insulation testing of Capacitors.
2. Instrument should have in-built battery & battery charger. Battery should be rugged, long-life & long working hours. Input Voltage for charging battery should be 230 V  $\pm 15\%$ , 50HZ  $\pm 5\%$ , AC.
3. Instrument should have display of IR values at programmable time intervals set as Rt1, Rt2, Rt3, PI, DAR, Voltage applied, Leakage current, time, step voltage, Dielectric discharge, etc., without applying any searching process.
4. Instrument should have programmable time to set resistance values as T1, T2, T3 up to 99'59".
5. Instrument should have direct digital display in the range of Kilo/Mega/Tera Ohms (Max. range should be minimum 20 T $\Omega$ ) and the display should be large enough to read the result with the backlight function.
6. Instrument should have selectable voltage ranges of 500V, 1000V, 2500V & 5000V.
  - 6a) Instrument should have the capability to operate both on mains and battery (rechargeable).
7. Instrument should have selectable voltage range from 50V to 1000V in steps of 10V and from 1000V to 5000V in steps of 25V.
8. Instrument should have memory storage of 990 cells with the capability of data transmission through USB.
9. Instrument should have automatic calculation of DAR and PI. It should also automatically calculate capacitance for user-programmable timing.
10. Instrument should have rated short-circuit rejection current of 6mA with high accuracy limit at 5KV injection to the object.
11. Instrument should have induction suppression up to 1550V or more, with automatic discharge of applied voltage from the object, ensuring no manual discharge rods are required for safety.
12. Instrument should have safety compliance as per IEC61010-1 CAT IV 600V and CAT III 1000V.
13. Instrument should have to conform to the following standards:
  - a. EMC requirements (immunity for industrial environment) according to 61326-1:2006 and EN 61326-2-2:2006
  - b. Type of insulation: double, as per EN 61010-1 and IEC 61557
  - c. Quality standard: design, construction, and manufacturing should be ISO 9001, ISO 14001, and PN-N-18001 compliant
14. Instrument should have real-time data download capability to Microsoft Windows-based PC software.

15. Instrument should have a suitable carrying case for the instrument and its complete set of accessories.
16. Instrument should have display of both cable length and capacitance in the kit itself.
17. Instrument should have suitable length of cables supplied along with the product.
18. Instrument should have case protection rating in accordance with EN 60529: IP67.

**C: SERVICE AFTER SALE:**

Bidder will have to submit the documentary evidence of having established mechanism for prompt services as & when required.