Technical Specifications for Digital Insulation Tester – 10KV

A: SCOPE:

This specification covers Design/Engineering, manufacture, testing & calibration as well as supply & delivery of Digital Insulation Tester (10 kV) suitable for measuring insulation resistance, DAR, PI in live /running Switch-yard up to 765 kV level 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. Performance from 765KV should be produced by bidder. 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 switch-yard.
   b. Insulation testing of EHV underground Power Cables.
   c. Insulation testing of EHV switchgears within charged switch-yard.
   d. Insulation testing of Capacitors.
   e. 400/220 kV charged/running Sub-Stations.

2. Instrument should have in-built battery and battery charger. Battery should be rugged, long life and capable of long working hours. Input Voltage for charging the battery should be 230 V ±15%, 50HZ ±5%, AC.

3. Instrument should have the capability to display IR values at programmable time intervals set as Rt1, Rt2, Rt3, PI, DAR, voltage applied, leakage current, time, step voltage, dielectric discharge etc., without requiring any additional searching process.

4. Instrument should have programmable time settings for resistance measurement as T1, T2, T3 up to 99 minutes.

5. Instrument should have direct digital display in the range of Kilo/Mega/Tera Ohms with a maximum range of 40 TΩ. The display should be large and backlit for easy readability.

6. Instrument should have selectable test voltage ranges of 500V, 1000V, 2500V, 5000V, and 10KV.

6a) Instrument should be operable both on mains and rechargeable battery.

7. Instrument should have selectable voltage steps: up to 1000V in 10V increments and up to 10000V in 25V increments.

8. Instrument should have memory storage of 990 cells with the capability of wireless data transmission via Bluetooth and USB.

9. Instrument should have innovative memory features with the ability to enter descriptions, measurement location names, etc.

10. Instrument should automatically calculate DAR, PI, and capacitance based on user-programmed timings.

11. Instrument should have rated short-circuit rejection current of 6mA with high accuracy at 10KV injection to the object.

12. Instrument should have graphical representation of resistance, current, and voltage with respect to time.

13. Instrument should have induction suppression capability up to 750V or 1550V or more, with automatic discharge of applied voltage from the object. No manual discharge rods should be required, ensuring user safety.

14. Instrument should be supplied with double shielded connecting cables having locking facility, suitable for use in highly induced environments and ensuring safe connections.

15. Instrument should comply with safety standard IEC61010-1 CAT IV or equivalent.

16. Instrument should conform that the following standards:
    a. EMC requirements (industrial immunity): EN 61326-1:2006 and EN 61326-2-2:2006
    b. Type of insulation: Double, as per EN 61010-1 and IEC 61557
    c. Quality standards: Design, construction and manufacturing compliant with ISO 9001, ISO 14001, and PN-N-18001

17. Instrument should support real-time data download to Microsoft Windows-based PC software.

18. Instrument should be supplied with a suitable carrying case for the instrument and all accessories.

19. Instrument should have the ability to display cable length and capacitance, with temperature correction, on the equipment itself.

20. Instrument should have case protection rating as per 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.