PORTABLE DEVICE FOR MEASURING POWER TRASFORMERS WINDING RESISTANCE

TECHNICAL SPECIFICATIONS

1. The instrument will be used in High and Ultra-high Voltage Substations for checking the Power Transformers and it will be designed to measure the ohmic resistance in the Power Transformers windings from 10MVA/150KV to 500MVA/400KV.

2. The measurement of the winding resistance will be performed with the method of passing a d.c. current through the winding and measuring simultaneously the voltage drop on the terminals.

3. The d.c. current must drive rapidly the core into saturation when applied to the high voltage winding and it must be also stabilized to eliminate the L (di/dt) error.

4. The stabilization of the measurement value will be done within a few seconds so that measurements are taken quickly and the typical reading time for the mentioned transformers will be stated clearly at the offers.

5. The measured value will appear in digital form and automatically directly after the stabilization (no balancing is required).

6. The offered instruments must have been sold and operate without problems for a long time.
   For this reason bidders are requested to submit with their offer a reference list of the offered instruments including the following information:

   α) Country and customer
   β) Quantity and type of the instrument
   γ) Year of sale

7. One year guarantee.

8. Power supply: 230V, 50Hz.

9. Nominal power: at least 500 VA.

10. Measuring ranges in steps with nominal values from 1 mOhm to 100 Ohms with automatic measurement compensation in 20^{o}C.

11. Minimum accuracy: ±0.2%.

12. Test current at measuring ranges in steps from at least 10A to 100 mA DC.

13. The instrument will be capable of communicating

    α) with a PC so that the measurements can be transferred.
    β) with a printer for a direct printing.

14. The instrument will be supplied with a specimen discharge circuit used to discharge the specimen when test is completed or when lead is accidentally disconnected or when power is lost. Besides there will be an indication of a safe disconnection of instrument conductors from the transformer terminals.

15. Operation temperature: $0^{o}C \div +50^{o}C$
    Storage temperature: $-5^{o}C \div +50^{o}C$

16. The instrument will include:

    α) a main and spare power supply cable.
    β) main and spare insulated leads for the current passing and the voltage measurement, with a minimum length of 15m and with suitable terminals to allow a safe connection with the transformer terminals.
    γ) shorting leads with a minimum length of 5m.

17. The offer will include a robust, for transport, case from synthetic material, which will be suitable for the transport of the instrument and its requisites.

18. The supplier has to provide together with the instrument a complete operation instruction book in Greek or English, as well as electrical and topographical instrument drawings.

19. Maximum instrument weight: 20 kg.
    Maximum instrument dimensions: 500 x 500 x 300 mm.

20. Allowed humidity up to 90%.

21. It is noted that the d.c. source will be included at the offer.

22. Attached to the technical offer bidders should state the possibility of optional education and the duration of it. At the financial offer the cost of the education should be written apart.

23. The device will be given with an accreditation certificate, according to the ISO requirements, by a recognized laboratory.