

I.P.T.O. S.A. / T.S.M.D. / C.S.B. / H.V.E.S. / C.L.S.  
I.P.T.O. S.A. / T.S.M.D. / C.S.B. / H.V.E.S. / CHEMICAL LABORATORY SUBSECTION  
INDEPENDENT POWER TRANSMISSION OPERATOR  
TRANSMISSION SYSTEM MAINTENANCE DEPARTMENT  
CENTRAL SERVICE BRANCH  
HIGH VOLTAGE EQUIPMENT SECTION  
CHEMICAL LABORATORY SUBSECTION  
AGIAS ANNIS 70,122 41  
EGALEO, ATHENS

Specification for device for the determination of Breakdown voltage in insulating oils according to IEC 60156

- Part I. Technical specifications.
- Part II. . Special requirements.
- Part III. Data to be supplied with the offer.
- Part IV. Additional requirements

## **Part I. Technical Requirements.**

The device under procurement shall be suitable for fully automatic transformer insulating oil dielectric breakdown tests.

### **1. Technical Specifications.**

- 1.1 Max test voltage : 0-100 kV and instrument weight less than 30 kg.
- 1.2. Electrically shielded test chamber, with high visibility of the oil sample for protection during test execution.
- 1.3. Easy clean test chamber.
- 1.4. Preloaded test standard IEC 60156:95.
- 1.5. Fully automating test sequences.
- 1.6. Continuously oil temperature measurement.
- 1.7. Adjustable electrode gap with locking mechanism.
- 1.8. Voltage resolution and accuracy : 0,1 kV  $\pm 1\% \pm 2$ digits.
- 1.9. Standard 400ml test vessel, made up from mechanically durable transparent polymer, with accurate electrode gap setting and locking mechanism. Complete with electrodes suitable for measurements according to IEC 60156:95 standard.
- 1.10. Temperature measurement range: 10°C- 65° C.
- 1.11. Operation and result display on integrated color screen.
- 1.12 Integrated electronic time and date for test results stamping and coding of the oil samples and printing through the internal printer and/or through common printer connected to laptop.
- 1.13 .Internal printer.
- 1.14 . Power supply : 220 V, 50Hz.
- 1.15. Barcode scanner for reading the barcodes of samples.
- 1.16. Complete with suitable 15,6 in laptop with at least processor i3 intel and 4 Gb RAM.
- 1.17. Data management software for the laptop, for storage, filing(plain saving without database functionality) and printing of the test results.
- 1.18. USB for backup of measurements and transfer to laptop.
- 1.19. User guide in Greek.
- 1.20. Compliance to IEC 61010 and EC 61326-1 Class B standards. CE marked.
- 1.21 Calibration Certificate from laboratory certified according to ISO 17095.

## **Part II : Special requirements.**

1. The instrument must be the most recent model of the manufacturer.
2. The device must have calibrating according to ISO 17025:2005 for the measurement of breakdown voltage(IEC 60156:95)
3. Manufacturer must be recognized worldwide and in Greece with proven experience on installing similar systems. It must be submitted for review a list of similar devices.
4. The supplier should fully install the system in the laboratory of ADMHE A.E./ DSSM / YP. XHMEIO, Agias Annis 70,Aigaleo.
5. The supplier must prove that the system works by performing 5 tests, according to IEC 60156 in not more than one month from the data of arrival of the system in ADMHE A.E./ DSSM/ TES/ YP. XHMEIO, Agias Annis 70,Aigaleo.
6. The instrument must be provided with a device that measures the voltage applied,calibrated according to ISO 17025:2005(calibration certificate for this device is required).
7. The manufacturer must have ISO 9001.
8. The manufacturer must have ISO 17025 for the periodic calibration of the device.
- 9 The supplier has to install , fully operate the device and train the lab personel on system operation.
10. It must be provided two (2) years of warranty.  
The warranty will cover each failure outsided from the usual instrument failures and it will cover the work hours and the spare parts.
11. The supplier must undertake to supply spare parts for five years at least , within a period of 2 months from the data of request.
12. The supplier must provide manuals which fully describe the operation of the system with detailed instructions for service and repairs in case of operational failure.
13. Payment will be made after the successful installation and inspection of the system and it will begin the period of guarantee.  
This guarantee will be covered with a supplier's bank draft corresponding to 5% of the total cost of the system and which will be returned to the supplier after two years of successful operation of the system.

## **Part III : Data to be supplied with the offer.**

1. Description of the proposed device.
2. Leaflets (with pictures ) in which all the technical characteristics of the device will be described.
3. The supplier must include in his technical offer a list of customers which use the offered or similar device in Greece.
4. A list of spare parts .This list should not include prices.  
However, the same list with the price of the spare parts must be included in the financial offer. The prices of the spare parts will not be taken into account the evaluation of the offer.
5. All the above mentioned specifications must be replied line by line by the bidder, on pain of exclusion, and must be proved clearly in the manufacturer's brochures and data sheets.

## **Part IV : Additional requirements.**

1. In case of a non accurate translation , the greek text of the specification will prevail.
2. In case of discordance between technical/special requirements and general requirements ,the technical/special requirements will prevail.