



**Technical Specifications of a Device of
Coulometric humidity measurement
of Insulating Oil using the KARL FISHER method**

**Part I. Technical characteristics.
Part II. Special requirements**



Part I. Technical Characteristics:

1. Coulometric titration method : Karl Fischer titration
2. Measurement Span: 1 μ g - 200mg
3. Humidity span: 1ppm-100% (with a repeatability accuracy better than $\pm 0,5\%$)
4. Capability of max sensitivity: 0,1 mg H₂O
5. LCD or TFT screen, illuminated, with a clear indication of parameters and measurements.
6. Keyboard or touchscreen for command execution.
7. Results given in ppm-mg- μ g-mg/pc-% κ.B.
8. The device is supplied with a USB port for connection with PC - printer – memory stick – barcode reader, as well as a serial port for connection with scale.
9. Built-in clock with date, with capability of indicating the sample code, the titration timestamp, the user code. All results should be printable, for assuring a proper laboratory operation.
10. Data and statistics storage for at least 100 samples.
11. Fast and secure access to all measurement methods.
12. Automatic and adjustable mixing of sample.
13. Pump for automatic addition of solution and for automatic evacuation of the reaction canister.
14. Fully adjustable mixing time of the sample, with or without iode production, for better accuracy and repeatability.
15. Maximum speed of titration <2 μ g/min (drift measurement).
16. Allowed temperatures of operation: + 5 to + 40°C.
17. Allowed atmospheric humidity: max 80% relative humidity without condensation
18. Allowed storage temperature: -10 έως + 50°C.
19. High quality and strength of all accessories (glass canisters, tubes, valves etc.).
20. Power supply of device: 100V to 250V and 47Hz to 60HZ.
21. Dimensions: As small as possible (<300X300X300mm).
22. Weight : < 4,5 kgr.
23. Language: Greek is desired, English is mandatory
24. The device must be accompanied by all the requires accessories, making it fully capable of performing measurements. Mandatory software for connection with a PC and printer (included in the purchasing cost).



Part II. Special Requirements:

1. After signing the contract, the supplier must:
 - 1.1. Να εγκαταστήσει πλήρως τη συσκευή.
 - 1.2 Prove the proper operation of the device in the laboratory, within one month after the arrival of the device in the laboratory of ADMIE..
 - 1.3 Prove the repeatability of each measurement, applying the requested methods for a satisfactory number of oil samples (at least 10).
 - 1.4 The device will be checked against the specified characteristics. In case of not fulfilling even one of the characteristics, then the device will not be accepted.
 - 1.5 The supplier will be obliged to provide full technical support for maintenance and proper operation of the device that will be installed in the physic-chemical laboratory.
 - 1.6 There will be full coverage of spare parts for a period of five years. The supplier will be obliged to supply ADMIE with all the requested spare parts, within two months upon request.
 - 1.7 The device will need to be supplied with CE certification and the manufacturer must also be certified accordingly.
2. The supplier will be obliged to deliver, along with the device, the manuals in both English and Greek language. The manuals must include full description of the device operation, as well as maintenance and tuning in case of improper operation.
3. After the successful installation and inspection of the device, the contracted price will be paid and the guarantee period will be initiated. The guarantee period will be covered by a letter of guarantee of 10% of the contracted price. The letter of guarantee will be returned to the supplier after the expiry of the guarantee period, unless forfeited for any reason. The guarantee period will have a duration of at least two years.