



# Sivananda Electronics

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## OIL TEST SYSTEM OTS-2K1

## Introduction

The quality standards of new insulating oil manufactured by petrochemical industries and of oil in use at various stages in electrical appliances can be tested by various methods. Chemically, it can be tested by neutralization, specification or with its reaction towards sulphuric acid. A further possibility is use of an infrared spectroscope. All these methods however, have the disadvantage that people trained in the electrical engineering field cannot perform them. Further more, chemical laboratory equipment is required and for the evaluation, mostly a chemical engineer has to be consulted. It is well experienced in Europe and elsewhere that use of the conventional techniques as above result in yielding variations in the test data on account of faulty handling oil samples, use of different measuring equipments with different specifications. In fact the oil test systems measuring flash – point, pour – point, neutralization test, breakdown test, water content are not sufficient enough from the point of view of electrical engineering who is interest in ascertaining the condition of insulation oil. Thus there is a specific need to involve accurate techniques to measure electrical parameters such as Loss Angle Meter (Tand) and Resistivity (IR)in addition to the conventional ones to correctly assess the condition of insulation oil. Latest researches in Europe and elsewhere have now conclusively proved that tan d and resistivity parameters are true indication of the condition of the oil. ISI have recommended the measurement of tan d and resistivity by using standardized oil cell made of stainless steel in conjunction with the instruments. Unfortunately, upto the recent past, the test equipments to measure tan d & resistivity were needed to be imported and it was very expensive, to go to for such imported instruments. Realising these techno economic aspects, M/s. Sivananda Electronics- Research and Development Division have recently introduced a completely indigenously import substitute system to measure Dielectric Constant Loss Angle & Resistivity of insulation oil as per IS: 6103-1971, IS: 6292-1971 and IS: 335-1972. The test system ensures the quality standards of the insulation oil being used in electrical appliance such as transformer, circuit breakers, capacitors, and cables. The system comprises of: -

- 1] Oil Loss Angle Meter, Model : MLO-1D
- 2] Million Megohm Meter, Model : LS-3D / LS-3B
- 3] Three Terminal Oil Test Cell (Stainless Steel : SS 316)
- 4] Heating Chamber for three terminal oil test cell with protection device, thermostat & temperature indicator.
- 5] Standard Capacitor for calibration of MLO-1D (Optional)

## Specification

Loss Ange Ranges	I] 19.99% FSD with a resolution of 0.01% II] 199.9% FSD with a resolution of 0.1% <b>Note:</b> Reading on 199.9% range are linear upto 20% thereafter correction chart for tan d to be used.
Dielectric Constant Meter	0.10 to 10.00
Test Voltage	0-600 VAC continuously variable or as ordered with resolution of 1 Volts.
Resistance Range	10 meg to $10^9$ meg in 7 range which together with Siva three terminal oil cell measures the resistivity of the order of $62000 \times 10^{12}$ ohm.
Test Voltage	+500V DC with 0.1% stability. The power supply is is fully protected against accidental short circuit.
Timer	10 Sec to 60 Sec.
Test Voltage	0-3 KV AC/4.5 KV DC
Indication	3 1/2 digit panel meter for tan d % Null, IR, AC & DC Voltage
Accuracy Tan d %	$\pm 1\%$ of the reading $\pm 2$ digits
Accuracy IR	$\pm 2\% \pm 1$ Digit of FSD for first four ranges $\pm 4\% \pm 1$ Digit of FSD for last four ranges
Warm up time	5 minutes
Dimensions	420 x 270 x 220 mm
Weight	9 Kg. (approx)

## Warranty

Sivananda Electronics warranties its products against defects in material and workmanship for a period of one year from the date of installation or 15 months from the date of dispatch, whichever is earlier. This warranty excludes normal wear on finishes or damage that occurs due to abuse or misuse.

## Our Other Products

- ❖ **Instruments:** 200+ types of test equipment's for Power, Wire & Cable, Capacitor, Oil & Petroleum industries are developed by in-house R&D Lab. Surge Testers, Automatic C&Tan Delta Bridges, Transformer Windings Resistance Meters, Oil Insulation Test Kits, Oil Tan Delta, Volume Resistivity & Dielectric constant Meter, Insulation Resistance Tester, Contact Resistance Meter etc.
- ❖ **Security:** Turnstiles, Tripods, Barriers, Metal Detectors, Bollards etc.

**Disclaimer :** To Keep pace with the technology Sivananda Electronics reserves it's right to update the system without prior consent.

## About Us

- 50 years (in 2020) of service to India.
- 1<sup>st</sup> to develop metal detectors for security in India. Made in India.
- 1<sup>st</sup> to develop Turnstiles in India. Made in India.
- Eclina Awards (1995), Elecrama Awards (1996), NIMA Awards (1999)
- Leading manufacturers of Security Systems and Test & Measuring Instruments in India.
- Largest supplier of Turnstiles in India in the last 25 years
- 150 different types of Electronic Test & Measuring instruments are indigenously developed for many industries.
- Exporting to 70+ countries.