



## SIVA INSTRUMENTS

# Automatic C & Tand Bridge

Model : MLS-11DA 200mA & HLS12A  
( Front Panel Controlled)



### Automatic Capacitance & Tand Test Set

This set includes Bridge Model:MLS11DA & HV Supply model :HLS12A , Touch-screen controlled & necessary cables & very flexible, user friendly Visual C++ windows based Software. The use of Touch-screen & Windows based software makes the system more flexible easy to handle & accurate Data can be stored, Retrieved and analyzed at site.

Temp correction for the tan delta of object is automatically done as per IEC.

Suitable for equipments installed in EHV switchyard such as Bushings of transformers & reactors, Current Transformers, Capacitor Voltage Transformers, Grading Capacitors, Windings of Transformers, Windings of reactors.

### Features

- 1)Automatic Measurement of Capacitance & Tan $\delta$  as per the test plan by auto-balancing .No need of manual balancing. Automatic voltage setting through software as per test Plan.
- 2)Safety features **Open ground Indication.**
- 3)Data logging with graph of voltage vs Tan $\delta$  to know the tan $\delta$  gradient & data analysis for comparison with old results / manufacturer's data.
- 4)Temperature correction as per IEC for Tan $\delta$ . **Temp & Humidity** Measurement.
- 5)controls on **front panel** , totally controlled by Touch-screen. Executes all the test modes/voltage automatically once fed .
- 6)Automatic Interference suppression make it suitable for extraneous conditions in 400KV switchyard .
- 7) Unlimited Data-storage.

## Measurements :

The system will provide following Information.

PARAMETER	RANGE	RESOLUTION	ACCURACY
CAPACITANCE	1pF – 1.1 uF	0.01pF	±0.5% of the reading ±2pF ( UST ) ±6pF ( GST )
TAN DELTA	0 % – 200%	0.01%	±2% of the reading ± 0.05%
VOLTAGE Measurement	500V – 12 KV	0.01KV	±1.5%, ±2digit
CURRENT Measurement	0 – 200 mA	1mA	±1 %, ±2digit

### Test Set Also Provides Information on:

Power Factor, Watt Loss, Line Frequency, Apparent Power, True Power, Reactive Power.  
External Temperature & Humidity Meter is provided with the equipment .  
External USB Printer is provided for Test Report Printing.  
Test Report will have Date & Time stamped.

**Analysis Software :** Windows based analysis software for Tan  $\delta$  Vs Time, Tan  $\delta$  Vs Voltage.

**Temperature Range :** 0°C to 50°C

**Humidity Range :** 0 to 90 % non condensing.

This Model with same specification is also available in Laptop Based Version.

## Calibrator Box

Calibrator Box with calibration certificate having capacitance 10000 pf with 4 Tan delta Taps is provided with the kit for On site calibration.

## With built in 100 pF capacitor.

**Standard Capacitor** : Standard Capacitor is in built into the HV power supply.  
**Capacitance** : 100 pf ± 0.5%, Actual value is indicated on capacitor.  
**Tan Delta** : Less than 0.0001  
**Test Voltage** : Up to 10 KV RMS.  
**Max. Voltage (1 Minute)** : 14 KV RMS.

## TECHNICAL SPECIFICATIONS FOR HIGH VOLTAGE POWER SUPPLY

**Test Voltage** 0 to 12 KV

**Rated Current** 100mA Continuous & 200mA( 15 minutes ON & 15 minutes OFF).

**Output Frequency** 50 Hz ( Lines Frequency )

This power capacity is adequate for capacitance up to 50,000pF around 10 KV and other capacitances at reduced voltages.

**Automatic balancing through windows based software & touch-screen.**

**No need of manual voltage control.**

**Automatic selection of seven different modes of operation for measurement of 3 terminal object from windows based software .**

**1) UST** - Ungrounded Specimen test - 3 combinations

This mode is used when the object under test is not grounded. This test provides most accurate results.

**2) GST** - Grounded Specimen test

This mode is used when the object under test is permanently grounded. This test is used more often in outdoor installations, power systems etc.

**3) GSTg** - Grounded specimen test with guard. 3 combinations.

This mode is used for measuring them stray capacitances and separating them from basic measurement in GST mode.

**Indication** : 3 ½ Digital Panel Meter.

**Standard capacitor** : 100pF 12KV built-in.

**Input Frequency** : From 50 Hz ( lines frequency ) , ± 5%.

**Power Required** : 230 VAC ± 10%, 1 phase AC , 50Hz.

**Safety Features** :

- Zero start control
- Open ground indicating lamp with double grounded connection
- External interlock.
- HT cut off on overload
- HT ON & Supply ON indication.
- All operating controls at earth potential
- Necessary terminals & Sockets for connection to Bridge

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