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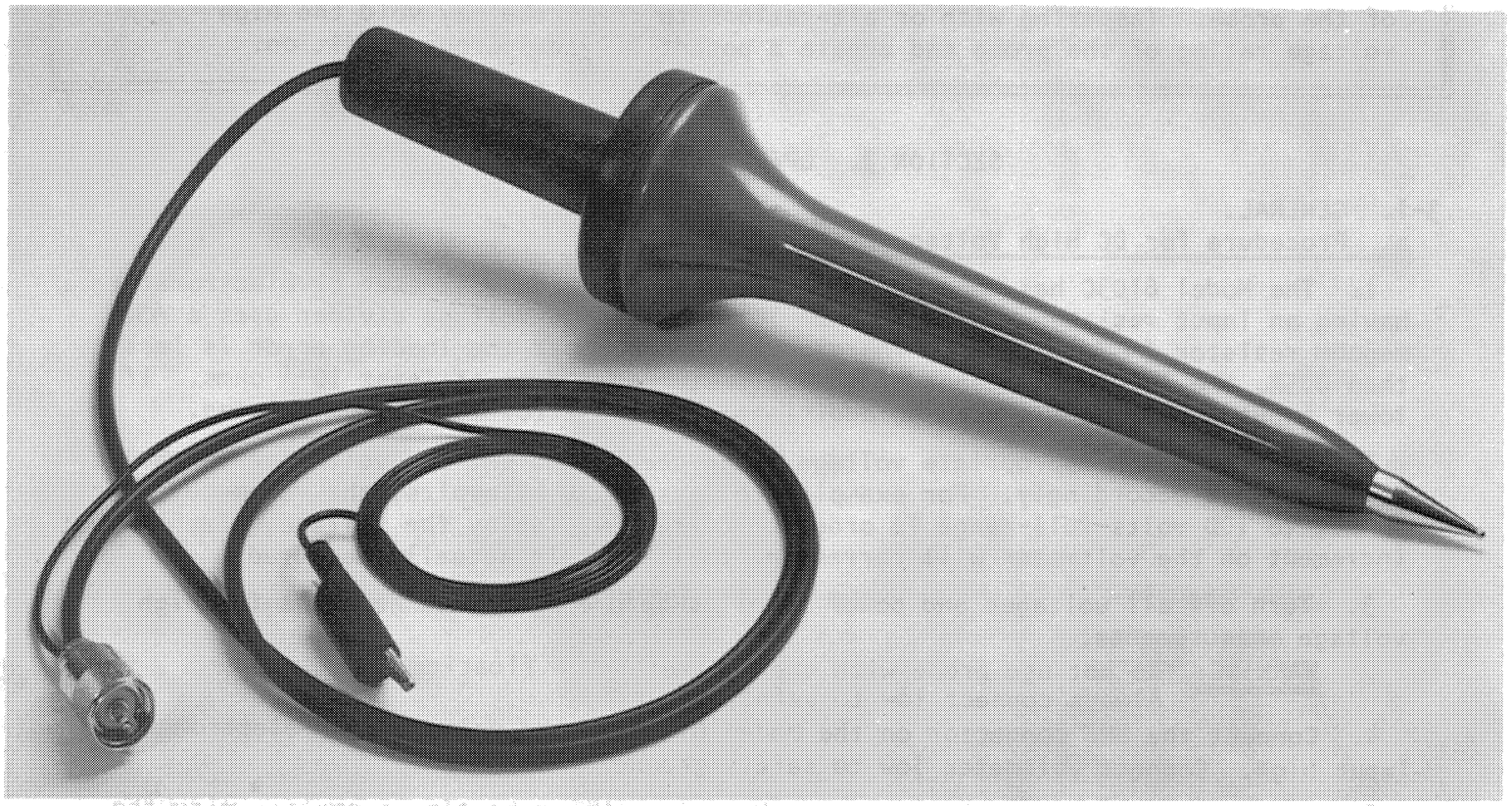
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Find the *Keithley 6103C* at our website: ***Click HERE***

SECTION 1. GENERAL INFORMATION

1-1. INTRODUCTION. The Model 6103C may be used with a voltmeter or electrometer having a nominal input resistance of 10^{11} ohms in the dc volts function. The division ratio is 1000:1. The maximum voltage which can be measured is 30 kilovolts.



HIGH VOLTAGE PROBE
SPECIFICATIONS

Guaranteed for 1 Year
(Calibrated at 25°C±3°C)

VOLTAGE RANGE: 0 to 30,000 volts dc.
INPUT RESISTANCE: 3.8×10^{11} ohms.
DIVISION RATIO: 1000:1.
RATIO ACCURACY: ±5%.
DIMENSIONS, WEIGHT: 3 in. maximum diameter x 15-1/4 in. long (76 mm x 387 mm), 30 in. long cable (0,8 m). Net Weight: 12 oz. (341 g).
ACCESSORY FURNISHED: Ground lead #18762B; four feet (1,2m), terminated by an alligator clip and banana plug.
NOTE: User should avoid useage above 60% Relative Humidity.

SECTION 2. INITIAL PREPARATION

2-1. GENERAL

Precautions When Using the Probe:

1. Avoid contamination of the probe body surfaces from oil, dirt, etc.

2. Inspect the probe body, cables, and plug to insure no damage has been sustained which might degrade insulating properties or break electrical paths.

3. The electrical connections can be checked out very easily by using a megohmmeter or a DMM with 1000MΩ range. Put the DMM on the 1000MΩ range. Connect the UHF plug properly to the DMM input. The meter should read about 375MΩ.

Failure of any of the above indicates that the probe is a safety hazard to use with H.V. and should be repaired immediately.

WARNING: Injury may result from electrical shock by improper use of probe. Extreme caution must be exercised when connecting to and measuring voltages up to 30 kilovolts. Care must be taken to maintain insulating properties of the probe. Tampering with or alterations to the probe may void the high voltage rating of the probe and create a potentially dangerous condition.

SECTION 3. OPERATING INSTRUCTIONS

3-1. GENERAL.

a. Procedure for DC High Voltage Measurements.

1. The Model 6103C has been designed for use with a dc voltmeter or electrometer having an input resistance greater than 10^{11} ohms. The voltage divider uses a 375 megohm resistor ($3.8 \times 10^{8}\Omega$). Therefore to ensure that the loading error is less than 0.5%, the input resistance of the voltmeter should be at least 10^{11} ohms. If a lower input resistance is used an additional loading error must be calculated.

2. Determine the appropriate voltage range needed and set the voltmeter to the dc voltage range accordingly. For example, to measure 30 kilovolts, the voltmeter must be set to 100 volts full-range in order to correctly display the voltage. Each 1 volt increment on the voltmeter will correspond to 1 kilovolt actually measured.

3. Turn off all voltages and power supplies before making connections for high voltage measurements.

WARNING: Do not use probe with the voltmeter low floating. Always connect low to safety ground.

4. Connect the UHF connector on the Model 6103C to the voltmeter or electrometer input high. Connect voltmeter low to safety ground.

5. Connect to the high voltage source by using the probe tip in contact with the high voltage. Connect the ground lead furnished with the probe between voltmeter "low" and the source "low". If other cable is required use a reliable cable of at least 18 AWG guage.

6. After following the above steps, turn on the high voltage.

7. After making a high voltage measurement, turn off high voltage supply to avoid accidental electrical shock.

8. Then connect probe tip to low to dissipate any residual charge on the probe tip.

9. Disconnect UHF plug from the voltmeter input terminals.

10. Disconnect the ground lead from power supply low.

SECTION 4. MAINTENANCE

4-1. GENERAL.

Instructions for Opening the Probe Body for Maintenance: Improper handling of internal circuit during disassembly, repairs or modifications of the probe may alter the published specifications and void the insulation properties. If repairs are performed by other than Keithley authorized personnel, no guarantee can be made as to the safety of making high voltage measurements.

To open the probe body, locate three Allen head screws in the handle. Use a #4 (3/32") Allen wrench to loosen the screws. Separate the body from the internal assembly. To separate the printed circuit board, locate three additional Allen head screws. Use the #4 Allen wrench to loosen the screws.

Always try to prevent scratching and nicking of the probe tip. The surface of the probe tip is smooth and round in order to prevent corona and to avoid scratching surfaces that have high voltage.

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