

# 34111A HIGH VOLTAGE DIVIDER PROBE OPERATING NOTE

## I. GENERAL.

A. The Model 34111A High Voltage Divider Probe is an accessory to be used with a digital or analog dc voltmeter having an input impedance of  $10\text{ M}\Omega \pm 1\%$ . The Model 34111A extends a dc voltmeter's measurement capability to 40 kV dc maximum.

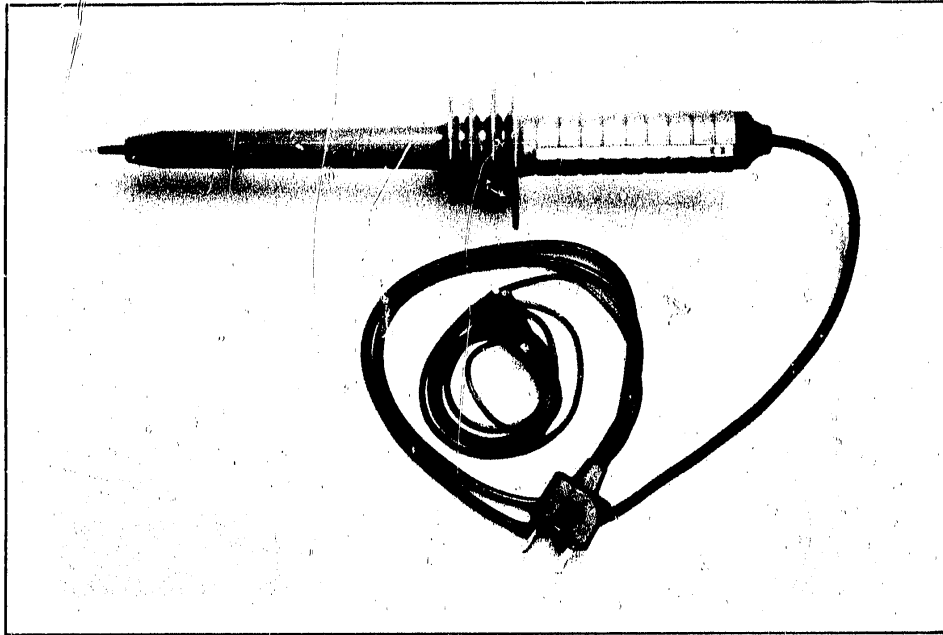


Figure 1. Model 34111A High Voltage Divider Probe.

## II. SPECIFICATIONS.

Maximum Input Voltage: 40 kV dc (6000 ft. max. altitude)  
Input Resistance:  $1000\text{ M}\Omega \pm 5\%$   
Division Ratio: 1000:1  
Division Ratio Accuracy: (when used with  $10\text{ M}\Omega \pm 1\%$  input resistance dc voltmeter)

Dimensions: 30 cm (12 in.) long x 7.7 cm (3-1/16 in.) diameter  
Weight: 34 Kg (12 ozs.)

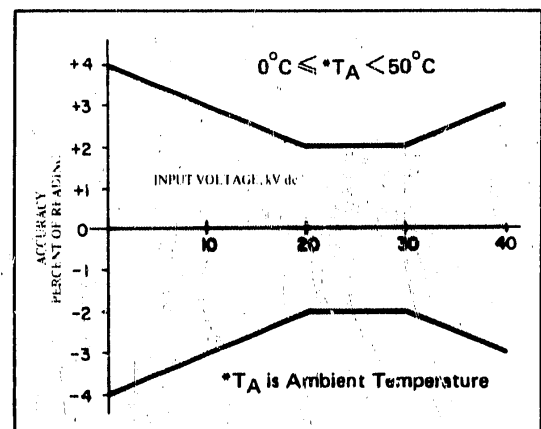


Figure 2. Division Ratio Accuracy.

34111-90002 (Microfiche 34111-90052)

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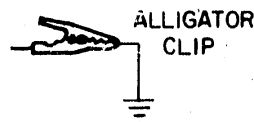
### III. OPERATION.

- A. Connecting the divider probe to the DCV (Hi) and COM (Low) terminals of a dc voltmeter with a nominal 10 M $\Omega$  input impedance will give "nominally" accurate readings, but fully specified accuracy is achieved only at 10 M $\Omega \pm 1\%$ .
- B. Select the desired dc voltmeter range.

#### NOTE

*The division ratio is 1000:1. If you are measuring 25 kV dc, set the voltmeter to a range that will allow a 25 V dc measurement.*

- C. Connect the divider probe common lead (alligator clip) to reliable chassis ground or known good earth ground.



*This ground connection is critical to the safe operation of the divider probe. Failure to make this connection when making high voltage measurements may also result in damage to the voltmeter. This connection must always be made before the probe tip comes in contact with high voltage and must not be removed until after the probe tip has been removed from the high voltage point.*

#### WARNING

*This high voltage probe is designed to prevent accidental shock to the operator when properly used. However, no engineering design can make safe a PROBE which is used carelessly. This operating note must be read and understood prior to using the probe. Improper procedure, or wrong analysis of the measurement situation, can result in a serious or fatal shock.*

#### SAFETY PRECAUTIONS

1. The -hp- Model 34111A High Voltage Probe must be used ONLY by personnel qualified to recognize hazardous situations, and trained in the safety precautions required to avoid possible injury when using this probe.
2. Do not work alone when making measurements of high voltage circuits.
3. Remember that voltages may appear unexpectedly in defective equipment.
4. For your own safety, inspect the probe for cracks, frayed or broken leads before each use. If any defects are noted, DO NOT use the probe.
5. Do not make measurements in a circuit where corona is present. Corona can be identified by a pale-blue color, or from a buzzing sound emanating from sharp metal points in the circuits, or from the odor of ozone.
6. Hands, shoes, floor and work bench must be dry. Avoid making measurements under humid, damp or other environmental conditions that could affect the insulation of the probe or the safety of the measurement situation.
7. For maximum safety, DO NOT hold the probe when making voltage measurements. This is especially true when the magnitude of the voltage is in question.
8. The probe body should be kept clean and free of any conductive contamination. See Section IV (Cleaning).
9. DO NOT allow the probe to be subjected to solvents or solvent fumes as this can cause deterioration of the molded probe body.

- D. Measure the voltage under test and observe the voltage reading on the dc voltmeter.

*The voltmeter reading X 1000 is the actual voltage under test.*

#### IV. CLEANING.

- A. Clean only the exterior probe body and cables using a soft cotton cloth lightly moistened with a mild solution of detergent and water.



*Do not allow any portion of the probe to be submerged at any time.*

- B. Dry the probe thoroughly before using it to make any voltage measurements..

#### V. REPLACEABLE PARTS LIST.



*Due to the lethal nature of the measurement voltages and the subsequent care required in the manufacture of a probe capable of measuring such voltages, the following parts are the only parts recommended for replacement. Any malfunctioning probe requiring replacement of parts not on this list must be returned to the factory for servicing.*

-hp- Part No.	Qty.	Description
34111A	1	Complete HV Divider Probe
1400-0046	1	Alligator Clip
0330-0029	1	Insulator Cup
5040-7994	1	Probe Tip

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#### VI. SCHEMATIC DIAGRAM.

- A. Figure 3 is the schematic diagram for the -hp- Model 34111A High Voltage Divider Probe.

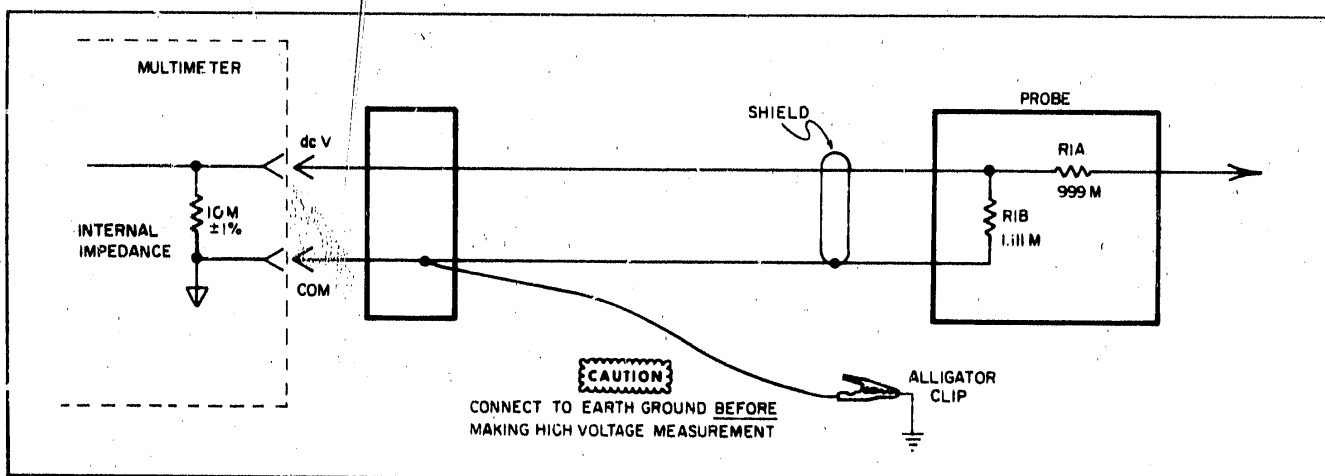


Figure 3. Schematic Diagram.