

S E R V I C E N O T E

SUPERSEDES

HP 4329A High Resistance Meter

Alternate Test Voltage Accuracy Test Method

Situation:

The recommended voltmeter HP 410C, used to check the accuracy of the Test Voltage, is obsolete.

The HP 4329A has 620 k ohm output resistance when its TEST VOLTAGE is set to 1000 V. So testing the 4329A 1000 V output voltage requires a high input resistance (100 M ohm) DVM. But generally a DVM does not have sufficient input resistance (about 10 M ohm standard).

Solution/Action:

Use the alternate test described below.

TEST VOLTAGE ACCURACY TEST

This test verifies that the HP 4329A's Test Voltage accuracy is within specifications.

Continued

DATE: 20 June 1991

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

AUTHOR: YO	ENTITY: 3301	ADDITIONAL INFORMATION:
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Test Equipment

Multimeter HP 3458A
High Voltage Probe HP 34119A
Dual Banana Plug - Dual Banana Plug cable PN 11000-60001

Procedure

1. Set the HP 4329A control settings as follows:

TEST VOLTAGE: 0 V
MODE: DISCHARGE
RESISTANCE/CURRENT: RESISTANCE

2. Connect the HP 4329A ground strap between the GND and GUARD terminals.
3. Set the HP 3458A function to DCV, and its range to 100 V (so that the HP 3458A's input impedance is 10 M ohm).
4. Set the HP 34119A's switch to 10 M ohm.
5. Connect the HP 34119A's Banana Plugs to the HP 3458A's Input HI and LO terminals.
6. Connect the HP 34119A's Alligator Clip to the HP 4329A's GUARD terminal as shown in Figure 1.
7. Set the HP 4329A TEST VOLTAGE to 1000 V.

4329A-09A

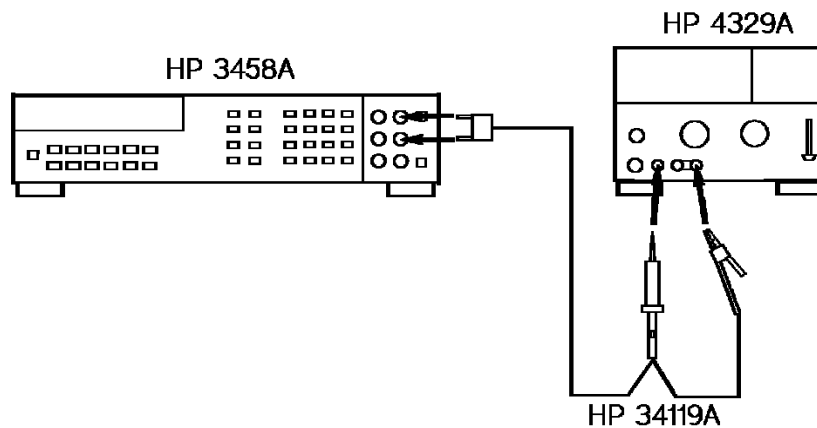


Figure 1. Test Voltage Accuracy Test Setup-1

8. Connect the HP 34119A's tip to the HP 4329A UNKNOWN Rx+ terminal.
9. Set the HP 4329A MODE to MEASURE, and measure the voltage with the HP 3458A and record the reading.
10. Remove the HP 34119A's tip from the HP 4329A.
11. Set the HP 4329A MODE to DISCHARGE and TEST VOLTAGE to 0 V.
12. Multiply the voltage measured in step 9 by 1000. Confirm that the accuracy of the value is within specifications, 1000 V $\pm 3\%$.
13. Disconnect the HP 34119A's alligator clip from the HP 4329A, and disconnect the HP 34119A's banana plugs from the HP 3458A.
14. Using the PN 11000-60001, connect the HP 4329A UNKNOWN Rx+ and GND terminals to HP 3458A Input HI and LO terminals, respectively, as shown in Figure 2. Note that the HP 4329A ground strap is connected between the GND and GUARD terminals.
15. Set the HP 4329A's MODE to MEASURE. Rotate TEST VOLTAGE switch through all Test Voltages except 1000 V and confirm the voltage is within specifications, $\pm 3\%$.
16. Set the HP 4329A MODE to DISCHARGE, and the TEST VOLTAGE to 0 V.

4329A-09B

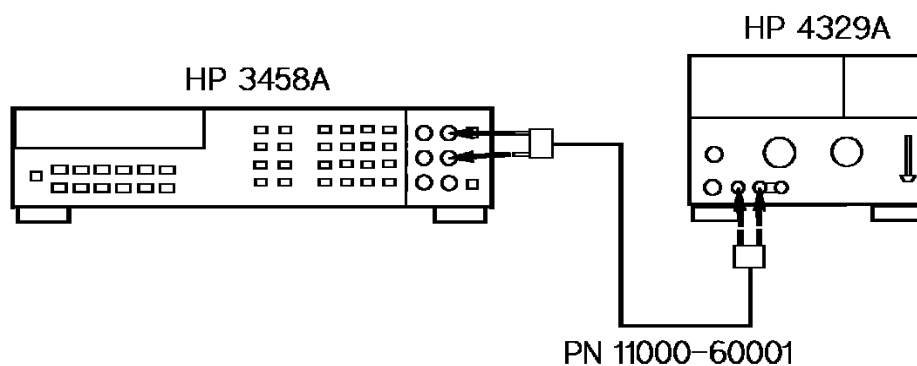


Figure 2. Test Voltage Accuracy Test Setup-2