

MODIFICATION RECOMMENDED

34970A-15

**S E R V I C E N O T E**

Supersedes:  
NONE

34970A Data Acquisition / Switch Unit

Serial Numbers: MY44053748 / MY44059513  
SG44001097 / SG44001135

10 MΩ and 100 MΩ Ranges Drift Out of Specification

Parts Required:

P/N	Description	Qty.
0699-3404	Resistor 400K-Ohms (A4R201)	1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:			
<b>MODIFICATION RECOMMENDED</b>			
ACTION CATEGORY:	X ON SPECIFIED FAILURE <input type="checkbox"/> AGREEABLE TIME	STANDARDS	LABOR: 1.0 Hours
LOCATION CATEGORY:	X CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE X SERVICE CENTER <input type="checkbox"/> CHANNEL PARTNER	SERVICE INVENTORY: <input type="checkbox"/> RETURN <input type="checkbox"/> SCRAP X SEE TEXT	USED PARTS: <input type="checkbox"/> RETURN X SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	NO CHARGE AVAILABLE UNTIL: June 1, 2012	
AUTHOR:	LH	PRODUCT LINE: SP	
ADDITIONAL INFORMATION:			

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**Situation:**

The above listed Ohm's current source reference resistor in the 34970A Data Acquisition / Switch Unit may exhibit sufficient change in value with time to cause the 10 megohm and/or the 100 megohm resistance ranges to be out of specifications at the first "scheduled calibration event" (either 90 days or 1 year).

**Solution/Action:**

Replace A4R201 if appropriate based on the performance of the 10 Megohm and/or the 100 Megohm Ranges (Ohms Function). Refer to the table below for test limits.

34970A Range	Value of Test Resistor	-----Test Limits*-----	
		90 Day Specifications	1 Year Specifications
10 M-Ohms	10 M-Ohms	±2.1 K-Ohms	±4.1 K-Ohms
100 M-Ohms	100 M-Ohms	±810 K-Ohms	±810 K-Ohms

\*Specifications are for 4-Wire Ohms Function, Autozero "on", Operating Temperature between 18 and 28 degrees Centigrade.

**Customers World-Wide:** A4R201 is a through-hole resistor located near A4U101 and A4R202 on the 34970A A4 DMM PC assembly. Customers with repair capability to replace this resistor may replace the resistor themselves. This approach will provide the minimum instrument downtime and inconvenience

**Alternative for US and Canadian Customers:** Customers may ship their 34970A to the Agilent Service Center in Roseville, California where the resistor will be replaced and the 10 Megohm and 100 Megohm ranges adjusted and operation verified. A "return authorization" is arranged by calling the following toll free number:

1-(800) 403-0801

Note: The following information will be requested:

Instrument model number and serial number

A "ship-to" address (for returning the instrument)

An e-mail address and phone numbers for any needed communications

**Agilent Repair/Calibration Centers:** If a 34970A is being serviced or calibrated at an Agilent Repair/Calibration Center and exhibits this drift, repair the instrument by replacing A4R201. Adjust the 10 MOhm range and verify operation of the 10 MOhm and 100 MOhm ranges.

**Alternative for all Other Customers:** Customers may ship their 34970A to their Agilent Repair Center. At the repair center the resistor will be replaced and the 10 Megohm and 100 Megohm ranges adjusted and operation verified. Customers arrange for this option by calling their Agilent Service Provider and arrange for a "return authorization":

Note: The following information will be requested:

Instrument model number and serial number

A "ship-to" address (for returning the instrument)

An e-mail address and phone numbers for any needed communications

**Installation Instructions:**

Note: Follow ESD guidelines to prevent damage when servicing the instrument.

Turn off the 34970A and remove power. Refer to the Service Guide pp 175, 176 for the following general disassembly and internal DMM (A4) disassembly instructions.

Remove the handle from the unit by turning it to the top and pulling the sides out (away) from the product. Remove the rear bezel and bumper by loosening the two screws using a T-15 screwdriver. Remove the screw from the instrument cover and slide off the cover. Locate the DMM PC assembly A4 (34970-66501), and slide out of the 34970A mainframe chassis. Carefully remove grey ribbon cable to connector J202. Remove DMM input cable.

Locate and remove R201. Replace R201 and solder into position. Trim leads. Install the DMM Shield. Install A4 DMM PC assembly. (If needed, DMM assembly instruction can be found online at [www.agilent.com/find/34970A](http://www.agilent.com/find/34970A), in link “Manuals, Guides, Notifications”. Refer to the “Internal DMM Assembly Installation Instructions”.)

Reassemble the 34970A and connect power. Power on the 34970A and allow it to warm up for 4 hours. Perform the Gain Adjustment Procedure found in Chapter 4 of the 34970A Service Manual for the 10 MOhm Range. Perform the Gain Verification Test for the 10 MOhm and 100 MOhm ranges.

