

S E R V I C E N O T E

SUPERSEDES: NONE

**34420A - Nano Volt/Micro Ohm Meter**

Serial Numbers: US36000000 - US36001171

**Inaccurate temperature readings**

To Be Performed By: Agilent-Qualified Personnel

**Parts Required:**

P/N	Description	Quantity
34420-69211	Rebuilt 34420A Product (exchange unit)	1

**Note:**

The 34420A may be returned to factory for an update.

**Situation:**

**THIS SERVICE NOTE ONLY APPLYS TO UNITS USED FOR MEASURING TEMPERATURE.**

When using certain temperature sensors and taking many temperature measurements that include certain temperature points, the 34420A will display a temperature that is 8, 4 or 2 degrees lower than the actual temperature for those key points. The locations of these points are dependent on the type of temperature sensor being used and the temperature measuring method employed.

*Continued*

DATE: January 1999

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:			
<b>MODIFICATION RECOMMENDED</b>			
ACTION CATEGORY:	<input type="checkbox"/> IMMEDIATELY <input checked="" type="checkbox"/> ON SPECIFIED FAILURE <input checked="" type="checkbox"/> AGREEABLE TIME	STANDARDS:	LABOR 0.5 Hours
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input checked="" type="checkbox"/> SERVICE CENTER	SERVICE INVENTORY:	<input checked="" type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	USED PARTS:	<input checked="" type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AUTHOR: REM	ENTITY: 0940	AGILENT RESPONSIBLE UNTIL:	January 2001
		ADDITIONAL INFORMATION:	

**Solution / Action:**

These low readings are caused by a math error in the voltage to temperature conversion firmware routines.

Units with firmware code 04-XX-XX or less have this defect.

Firmware code version may be determined by using the following front panel key sequences:  
(Turn unit off and then on. )

<b>Key Stroke</b>	<b>Display</b>
Shift(Blue key), "<"	A:MEAS MENU
"<"	G:CAL MENU
"<"	F:I/O MENU
"<"	E:SYS MEMU
"V"	1:RDGS STORE
"<"	1:REVISION
"V"	REV ??-XX-XX

These measurement errors are limited to temperature measurements made with RTD's and certain thermocouple types.

Measurements made with thermistors and SPRT's are not affected by this firmware defect.

If you are using thermocouple sensors in the external reference junction configuration, that is where two thermocouples or more are involved in the measurement, we recommend that the unit be updated or replaced.

List of temperature sensors affected by this defect when used in the single sensor configuration:

<b>Temperature Sensor Type</b>	<b>Chance of seeing the defect (per reading)</b>	<b>Affected temperature range</b>
RTD's	1 in 75000	above 620° C
T thermocouple	1 in 27000	above 209° C
N thermocouple	1 in 13000	above 122° C
J thermocouple	1 in 28000	above 774° C
E thermocouple	1 in 6500	above 57° C
B thermocouple	1 in 174000	above 1520° C

List of temperature sensors affected by this defect when used in the reference junction configuration:

S thermocouple  
R thermocouple  
K thermocouple  
T thermocouple  
N thermocouple  
J thermocouple  
E thermocouple  
B thermocouple

If the unit has 04-XX-XX or less firmware code then the unit can be replaced or updated. If unit is still under the standard warranty, replacement is recommend. For units out of warranty, updating the unit is preferred.

**To have unit replaced:**

For USA & Canada customers, call 1-800-258-5165 or contact your local Agilent Service Center to arrange to have your instrument replaced.

For other customers, please contact your local Agilent Service Center.

**To have unit updated:**

If customer wishes to have his unit updated then unit must be returned to the factory. Processing time for this upgrade will be less than one week plus shipping time. The unit should be shipped to the address listed below with the instruction requesting this update ( reference this service note). Include a "Ship to" address for returning the modified unit.

Instrument Repair Coordinator  
MS DU402  
Agilent Technologies  
Loveland Site  
815 14th Street S.W.  
Loveland, CO 80537  
USA