

MODIFICATION RECOMMENDED

34970A-18

S E R V I C E N O T E

Supersedes:
None

34970A Data Acquisition / Data Logger Switch Unit

Serial Numbers:

MY44072596 to MY44081151
SG44001205 to SG49001333

AC Volts and AC Current accuracy may drift out of specification before first calibration

Parts Required:

P/N	Description	Qty.
None		

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:		
MODIFICATION RECOMMENDED		
ACTION <input type="checkbox"/> ON SPECIFIED FAILURE CATEGORY: X AGREEABLE TIME	STANDARDS LABOR: 0.5 Hours	
LOCATION X CUSTOMER INSTALLABLE CATEGORY: <input type="checkbox"/> ON-SITE (active On-site contract required) <input type="checkbox"/> SERVICE CENTER <input type="checkbox"/> CHANNEL PARTNER	SERVICE <input type="checkbox"/> RETURN INVENTORY: <input type="checkbox"/> SCRAP X SEE TEXT	USED <input type="checkbox"/> RETURN PARTS: <input type="checkbox"/> SCRAP X SEE TEXT
AVAILABILITY: PRODUCT'S SUPPORT LIFE	NO CHARGE AVAILABLE UNTIL: June 30 th 2015	
X Calibration Required <input type="checkbox"/> Calibration NOT Required	PRODUCT LINE: GM AUTHOR: TMC	
ADDITIONAL INFORMATION: Calibration only. This service note is only valid and applies for the 1 st calibration performed on this unit.		

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Situation:

AC Voltage and Current drifts due to insufficient part stabilization. This may cause the AC voltage drifting out of its 1 year specification under the operations below

- i) After 10 hours if the unit is making ACV measurement at 300Vrms, or
- ii) After 250 days if making ACV readings with no signal attached.

Units that have been powered on and adjusted as specified in the Solution/Action section will subsequently meet its 1 year specification.

Solution/Action:

Power on 34970A:

- At least 10 hours measuring 300Vrms , or
- At least 250days making ACV readings with no signal attached

Do a verification test of the 25 points listed in the tables below.

Input		Range	Quick Check	Error from Nominal		
V rms	Frequency			24 hour	90 day	1 year
100 mV	1 kHz	100 mV	Q	± 70 µV	± 90 µV	± 100 µV
100 mV	50 kHz	1 V		± 150 µV	± 160 µV	± 170 µV
1 V	1 kHz			± 700 µV	± 900 µV	± 1 mV
1 V	50 kHz			± 1.5 mV	± 1.6 mV	± 1.7 mV
10 V	1 kHz		10 V	Q	± 7 mV	± 9 mV
10 V	50 kHz	100 mV	± 15 mV		± 16 mV	± 17 mV
10 V	10 Hz		± 7 mV		± 9 mV	± 10 mV
10 mV ^[1]	1 kHz		± 34 µV		± 45 µV	± 46 µV
100 V	1 kHz		100 v	Q	± 70 mV	± 90 mV
100 V	50 kHz	300V	± 150 mV		± 160 mV	± 170 mV
300 V	1 kHz		± 270 mV		± 390 mV	± 420 mV
300 V ^[2]	50 kHz		± 600 mV		± 690 mV	± 720 mV

Input		Range	Quick Check	Error from Nominal		
Current	Frequency			24 hour	90 day	1 year
10 mA ^[1]	1 kHz	10 mA	Q	± 14 µA	± 14 µA	± 14 µA
100 mA ^[1]	1 kHz	100 mA		± 600 µA	± 600 µA	± 600 µA
10 mA	1 kHz	1 A		± 1.41 mA	± 1.41 mA	± 1.41 mA
1 A ^[1]	1 kHz	1 A		± 1.4 mA	± 1.4 mA	± 1.4 mA

Input		Range	Quick Check	Error from Nominal		
Voltage	Frequency			24 hour	90 day	1 year
10 mV ^[1]	100 Hz	100 mV	Q	± 0.06 Hz	± 0.1 Hz	± 0.1 Hz
1 V	100 kHz	1 V		± 6 Hz	± 10 Hz	± 10 Hz

Input		Range	Error from Nominal		
Voltage	Frequency		24 hour	90 day	1 year
1 V	20 Hz	1 V	± 700 µV	± 900 µV	± 1 mV
1 V	20 kHz	1 V	± 700 µV	± 900 µV	± 1 mV
1 V	100 kHz	1 V	± 6.3 mV	± 6.8 mV	± 6.8 mV
1 V	200 kHz	1 V	± 45 mV	± 45 mV	± 45 mV
1 V	250 kHz	1 V	± 45 mV	± 45 mV	± 45 mV
1 V	300 kHz	1 V	± 45 mV	± 45 mV	± 45 mV
10 V	1 kHz	10 V	± 7 mV	± 9 mV	± 10 mV
1 V	1 kHz	10 V	± 3.4 mV	± 4.5 mV	± 4.6 mV
100 mV	1 kHz	10 V	± 13 mV	± 14 mV	± 14.06 mV

- If the verification is <166% of the 90 day or 1 year spec (whichever is appropriate) then perform a full adjustment, (Zero Adjustment and Gain Adjustment) as specified in the [Service Guide](#). The Service Guide can be found at: www.agilent.com/find/34970A > Document Library > Manuals
- If the verification is >166% of the 90 day or 1 year spec (whichever is appropriate) then send the unit into the service center. The service center will either exchange the unit or replace the resistors whose drift is causing the problem.

Customers sending their unit to Agilent for calibration should do so only after the unit have been turned on for the specified number of hours.

Service Inventory Action:

All service inventory has already been updated. There are no scrap parts.

Revision History:

Revision Number	Date	Author	Reason For Change
1.0	6/23/14	TMC	As published