



**00-021B
2 May, 2007**

TROUBLESHOOTING MOLY TEMPERATURE IN ANALYZERS WITH STATUS/TEMP CARDS

I. SCOPE:

This service note describes a method of troubleshooting Moly and Hicon Temp problems in analyzers using the Status/Temp card, (currently M101A, M200A, M200AH, M200AU, M201A).

II. PARTS:

None

III. TOOLS:

Phillips Head Screwdriver
Multi-Meter
Small Flat-blade Screwdriver

IV. PROCEDURE:

1. If the temperature displayed on the front panel is low, (below 310 for Molys and below 695 for hicons), go to step 2. If the displayed temperature is too high then the problem is likely to be in the Power Supply Module (PSM). Follow the instructions below:
 - A. Look at the LED marked "converter" on top of the PSM. It should be off. If it is on, then place the meter on DCV and place the black lead onto a white test point on the V/F card. Measure the voltage at U33-12 on the main board. This is done by pushing the test lead into the connector at pin 12 until you make contact with the pin. This voltage should be less than .5V. If not, replace the V/F card and see if the problem is fixed. If U33-12 is less than .5V, replace the PSM or the relay inside the PSM or contact an API customer service rep.
 - B. If the LED marked "converter" on top of the PSM is off, then set the meter to ACV. Locate the connector on the converter, which has a black and clear wire. Push the meter leads into the connector at the black and clear wires to measure the voltage going to the heater. This voltage should read zero. If not, replace the PSM or the relay inside the PSM or contact an API customer service rep.
2. Set the meter to DCmV. Measure the thermocouple temperature at J1 on the Status/Temp card by connecting the leads across the two metal tabs at the top of J1. The moly should be running at 315 \pm 3°C. The hicon should be running at 700 \pm 5°C. The voltage should be as listed below based upon type of converter and type of thermocouple:
 - A. For Molys with type J thermocouple this voltage should be 16.3 \pm .2mV.
 - B. For Molys with type K thermocouple this voltage should be 11.8 \pm .2mV.
 - C. For mini-hicons (all have type K) this voltage should be 27.0 \pm .2mV.
3. If the voltage at J1 is correct, then set the multimeter to DCV. Place the black lead on TP2 and the red lead on TP1 of the Status/Temp card. The voltage should be as follows based upon the type of converter and type of thermocouple:
 - A. For Molys with type J thermocouple this voltage should be 3.15 \pm .05V.

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- B. For Molys with type K thermocouple this voltage should be $2.00 \pm 0.05V$.
 - C. For mini-hicons (all have type K) this voltage should be $4.00 \pm 0.1V$.
- If the voltage at TP1 of the Status/Temp card is wrong, then replace the Status/Temp card.

- 4. If the voltage at TP1 of the Status/Temp card is correct, the problem is either a bad V/F card, or a connection problem between the Status/Temp card and the V/F card. Remove both the V/F and Status/Temp cards and check the connectors on the bottom for bent/missing pins. If all pins are present and straight, replace the V/F card.

If you have questions regarding this procedure or any API equipment, please contact an API Customer Service representative at:

Phone: (858) 657-9800 Email: customerservice@advpol.com
Fax: (858) 657-9816 WWW: <http://www.advpol.com>

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