



**03-024C**  
**2 May, 2007**

**INSTALLATION OF DETECTORS IN M300E/300EM/360E ANALYZERS**

**I. PURPOSE:**

We have modified the design of the IR detectors used in the M300E and M360E analyzers. This modification includes two parts: The addition of a heat sink to the detector and a modification of the circuitry on the Sync-Demod/Preamp board. In order to ensure that the detector works correctly, it is imperative that both the detector and sync-demod/preamp board be replaced as a unit, and also that the heat sink be installed on the detector. The installation of the heat sink requires a longer screw for the detector than the standard screw. Due to the change in preamp circuitry, a change in the warning limit for the PHT cooler circuit is required as well.

**II. TOOLS:**

#2 Phillips Head screwdriver

**III. PARTS:**

For M300E use KIT178

For M300EM use KIT179

For M360E use KIT180



The electronics used in T-API analyzers are sensitive to Electrostatic Discharge (ESD). When working on any T-API device, please ensure that you are properly grounded prior to handling or touching any electronic circuitry in the analyzers! For more information on how to protect sensitive components from ESD during handling, please contact T-API customer service and ask for the ESD Service note number 03-022A.

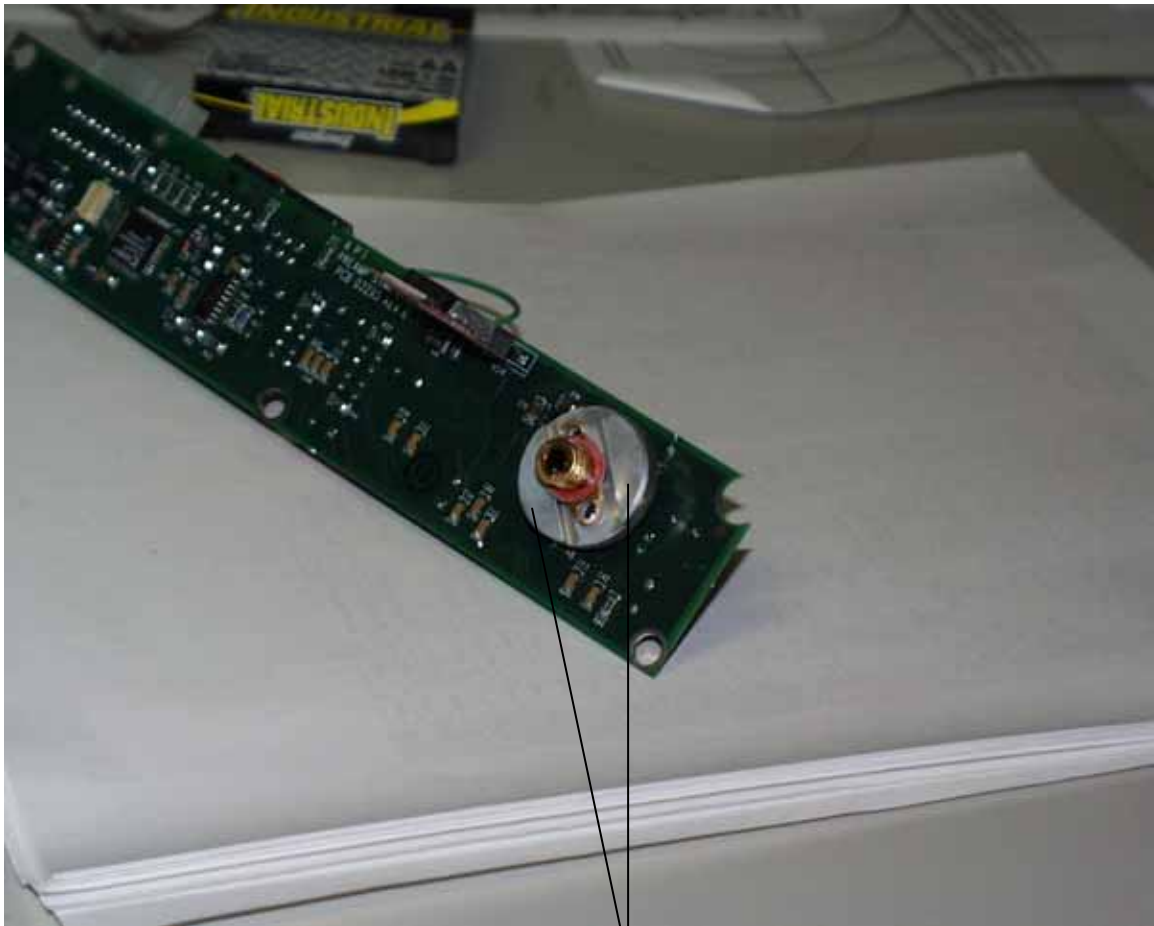
**IV. PROCEDURE:**

1. Remove power from analyzer.
2. Remove cover from analyzer.
3. Remove cover from sync-demod card located on top of the optical bench.

4. Near the front of the analyzer, on the left side of the sync-demod card, you will see two holes in the board. Under the holes are phillips head screws. These are the screws that mount the existing detector. Loosen these two screws until they are free from the bench.
5. Remove the 3 screws holding the sync-demod card to the bench.
6. Remove the sync-demod board from the bench, along with the detector. Keep the existing screws with the detector/sync-demod and return them to T-API using the RMA number that was given with the new parts.
7. When installing the new detector/sync-demod assembly you will notice that the detector has a circle of metal between the detector and the sync-demod card. This is the heat sink. Ensure that it has two screws sitting in the heat sink.
8. Carefully lower the sync-demod board over the standoffs until the detector seats in the mounting hole. Install the two screws into for the detector and heat sink by getting them started, then turn them 2 turns at a time, alternating between the screws until the screws are tight.
9. Install the 3 screws holding the sync-demod board on the bench.
10. Power on the analyzer.
11. Press SETUP-MORE-VARS and change the password to 929. Press ENTR.
12. Press JUMP and enter the number 60. Press ENTR.
13. Press NEXT until you see PHOTO\_TEMP\_SET. Press EDIT-ENTR-ENTR.
14. The HIGH WARNING should be displayed as 3000mV. Change the number to 4850mV and press ENTR. Exit to the main menu.
15. Allow the analyzer to warm up for 1 hour.
16. Input zero air to the analyzer.
17. Adjust VR1 until the COMEAS reads between 4000 and 4500mV.
18. Press SETUP-MORE-DIAG-ENTR. Press NEXT until you see "DARK CAL". Press ENTR-CAL and wait for the dark calibration to finish. Exit to the main menu.
19. Wait for the STAB number on the front panel (press the TST buttons to find it) to drop to <2.0 and then zero the analyzer.
20. Input span gas to the analyzer. Wait for the STAB number to drop to <2.0 and span the analyzer.

Put Thermally conductive paste between the detector and the heats sink on the back surface of the detector.





Put thermally conductive paste between the heat sink and the optical bench at shown surfaces.

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