

Technical Bulletin # 58

To: Coulometrics Support Personnel

From: Engineering Dept.

Date: 7-29-04

Subject: CM5240 – Acid/Rinse Pump Electronic Testing

Purpose: This bulletin describes a VOM method for determining CM5240 acid or rinse pump electronic operation.

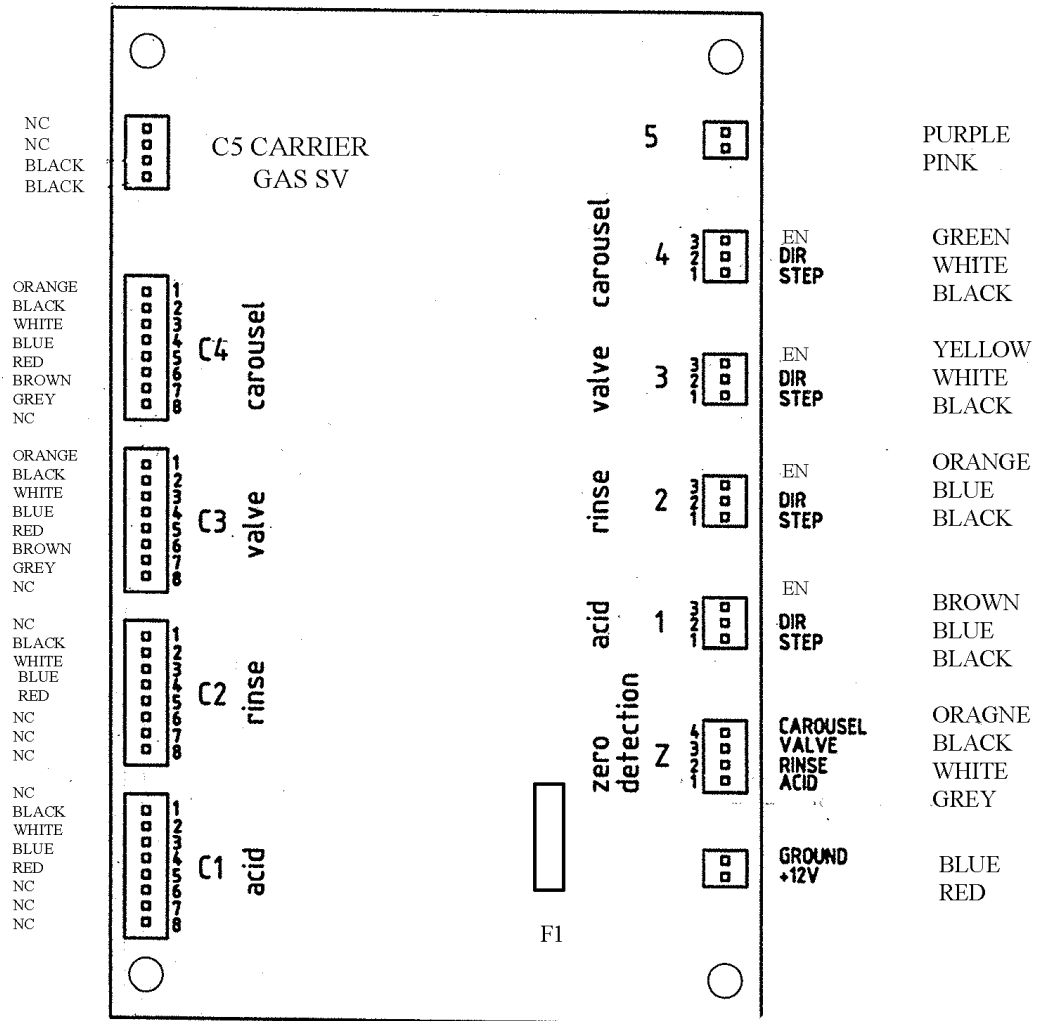
Problem: One or both pumps are not dispensing fluid to the CM5240 reaction chamber.

Procedure: The following assumes the fuse on the stepper motor interface PCB (CM110-059) is not blown. If blown, replace with identical fuse (Figure 1). Before proceeding with the electronic test, make sure all electrical connections (top of pump, signal to pump and on the PCB CM110-059) are secure.

1. Turn off the CM5240 with the switch at the front of the instrument and unplug the power cord from the 120V receptacle.
2. Carefully remove the condenser from the CM5240.
3. Remove the carousel from the CM5240.
4. Disconnect the reservoir bottles from their respective pick-up lines. Remove the acid and rinse water reservoirs from the bottle rack. Leave the bottle rack with the waste bottle receiver in the rack compartment.
5. Remove the alignment/shipping screw from the CM5240 top panel then remove the panel by working the fingertips between the back panel and top.
6. Remove the side panel on the electronics (right) side of the instrument in the same manner as described in 4, above.
7. Carefully remove the shrink insulation from the top and bottom of either resistor located at the rear of the pump. (See Figure 2.)
8. Carefully attach the VOM leads to the exposed resistor contacts making sure the leads are not grounded to the body of the pump motor.
9. Set the VOM to indicate DC mv.
10. Plug the power cord into the 120V receptacle.
11. Turn on the CM5240 with the switch on the front of the unit.
12. Make sure the acid dispense LED for 10 mL acid is illuminated.
13. Press 'Clear/Init.' once. The slider will move to the reaction area, pause for about 40 seconds (clears CO₂ from the system) then the acid pump will begin pumping. The 10 mL acid LED should flash when the pump is supposed to be operating.
14. The VOM should show a fluctuation of about +90 to -90 mv during pump operation.
15. If the signal is present and the pump fails to operate the probability is the pump is defective and must be replaced.

16. If the signal is not present press the 'Clear/Init.' button once. The unit will now begin a cleaning cycle. The rinse pump will turn on and the pump should be heard. (If the rinse pump is touched during the rinse pump cycle vibration during pump operation will be felt.)
17. If the rinse pump is not audible or does not vibrate during operation test for electronic signal as described above following steps 1 and 7-16.
18. If there is a signal and the rinse pump is not operating the pump is defective and needs to be replaced.
19. If there is no signal at the rinse pump the probability is that a component(s) has (have) failed on PCB CM110-059 and the board needs to be replaced.

Figure 1



NOTE:
 1. F1 FUSE CM125-014 , 20MM T5.0 AMP

Figure 2

