SENTECH CORPORATION

Field Testing
SenTech Infra-Red type Refrigerant Monitors

Item required:
Sentech Corporation P/N ACC 055-R 134A Test Kit
(or R-134a and a sample bag can be used to verify functional operation of the monitor, with the exception of accuracy)

Apply power to the monitor. Allow approximately one hour of warm up for stabilization with door on the monitor closed.

1. The monitor should be programmed for R-134A area 1 as explained in the Installation and Operation manual Pages 11 thru 13. Alarm levels shall be set at Low Alarm 25 PPM Main Alarm 50 PPM High Alarm 150 PPM. At this time the calibration gas bag, provided with the test gas kit should filled, being careful not to contaminate the sample gas going into the bag with outside atmosphere.

2. After the monitor completes the auto zero portion of the auto-sampling mode of operation the unit should be placed in the manual mode of operation, area 1.

3. At this time the calibration gas bag will need to be attached to the monitor area 1 at the monitor solenoid valve input.

4. As you watch the digital display on the front of the monitor an increase in PPM concentration should be noted. The level will gradually increase to approximately 373 PPM + or – 5 to 10% of the 373 PPM level.

5. At this point the bag should be disconnected from the monitor and the manual mode of operation should be exited to the auto zero mode of operation followed by the auto-sampling mode of operation.

6. As the monitor cycles back to Auto sample area 1 the calibration gas bag should again be attached to the area 1 solenoid valve input at the monitor. At this point another increase will be noted in PPM level concentration and as the level increases past the low level alarm trip point setting of 25 PPM the low alarm LED on the front of the unit will light. As the monitor then continues to increase in its level reading in PPM level of gas concentration the Main and High alarm LED's will light as the alarm set points are passed. As each of the alarm LED's light the alarm relays should also engage perspective to the alarm state.

7. At this point the calibration gas bag should be disconnected from the monitor. After Auto Zero has occurred the monitor will cycle into the auto-sampling mode and the reset switch on the front of the monitor should be pushed to reset the unit.

If the above test was not in compliance with the forgoing procedure, the following checks should be performed.

1. Is the pump running and does it have proper flow for the pneumatics portion of the system? The proper procedure to check this would be to utilize a flow meter connected to the input at the solenoid valve assembly that will measure in the range of 0 to 2.0 liter per minute. The flow rate should be at least .4 liter per minute on monitors that operate at 50 hertz and no more than 1.2 liter per minute on monitors that operate at 60 hertz. Make sure that all pneumatics connections are air tight between the pump and the orifice restrictor located at the inline input connection to the Infrared Optical Bench (The Sensor). **Make sure that the orifice restrictor is clean and free of contamination.**

   If there is no flow meter available a quick check though not very accurate can be made by attaching a small piece of tubing to the output side of the pump and placing the output end of the tubing into a small glass of water checking for bubbles, or air flow, making sure no liquid contamination gets to the pump. **The output connection to the pump is the bottom connection or the closest connection to the base of the pump.**

2. Is the Display on the monitor functioning properly? If there is no display check and make sure that all plug in connections are seated properly to the amplifier board located on the door. Check with a digital multi-meter for the presence of approximately 28 volts AC between terminals 5 and 8 of transformer T2. Check with a digital multi-meter for the presence of approximately 16 volts Ac between terminals 6 and 7 of transformer T1. Check with a digital multi-meter for the presence of approximately 16 volts AC between terminals 7 and 8 of T1. Check for the presence of approximately 30 volts AC between terminals 6 and 8 of T1. **If the above voltages are not present check the fuse on the left side of the unit and the associated wiring found on the wiring diagram in the Installation and Operation Manual for the monitor.**

3. Is the monitor alarming in a situation where no leaks in the refrigerant system seem to be detectable? **Check to make sure that all chemical containers that could have a chlorine or a fluorine base are stored outside the measurement area.**

   At the ends of the Infra-red Optical Bench located on the back plate there are two electrical connectors. Make sure that both connectors are properly seated. A loose connection at either end could cause signal fluctuations that would send the monitor into alarm.

4. Perform the Symptom Remedy checks located in the Troubleshooting Guide section of the Installation and Operation Manual for the monitor.

This concludes the testing of the monitor.

For questions involving the testing of SenTech Monitors please contact
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