

# **SIP NEO<sub>3</sub> System Troubleshooting Guide**

## Troubleshooting Instructions

### Section A – Overall system test

Caution : You will be dealing with high voltages. Use extreme precautions when touching wires or components while power is ON.

1. Make sure that AC power is turned OFF.
2. Connect all components as shown in figure 1  
The components include: Air pump, O3 generator board (small board), Main controller board (larger board), Interconnect cable, load ( up to 650W light) bulb), AC power cord.
3. While holding down the UP, DN and SEL buttons on the main board, turn power ON. Please note that all components will power up as long as the buttons are held down.
4. Observe the following:
  - LCD display turns ON with date and time  
The date and time may be incorrect.
  - Air pump turns ON.
  - Faint purple glow across the O3 Corona tube and a strong O3 odor.
  - Light bulb turns ON.
5. If any of these conditions are not observed please proceed to section B.

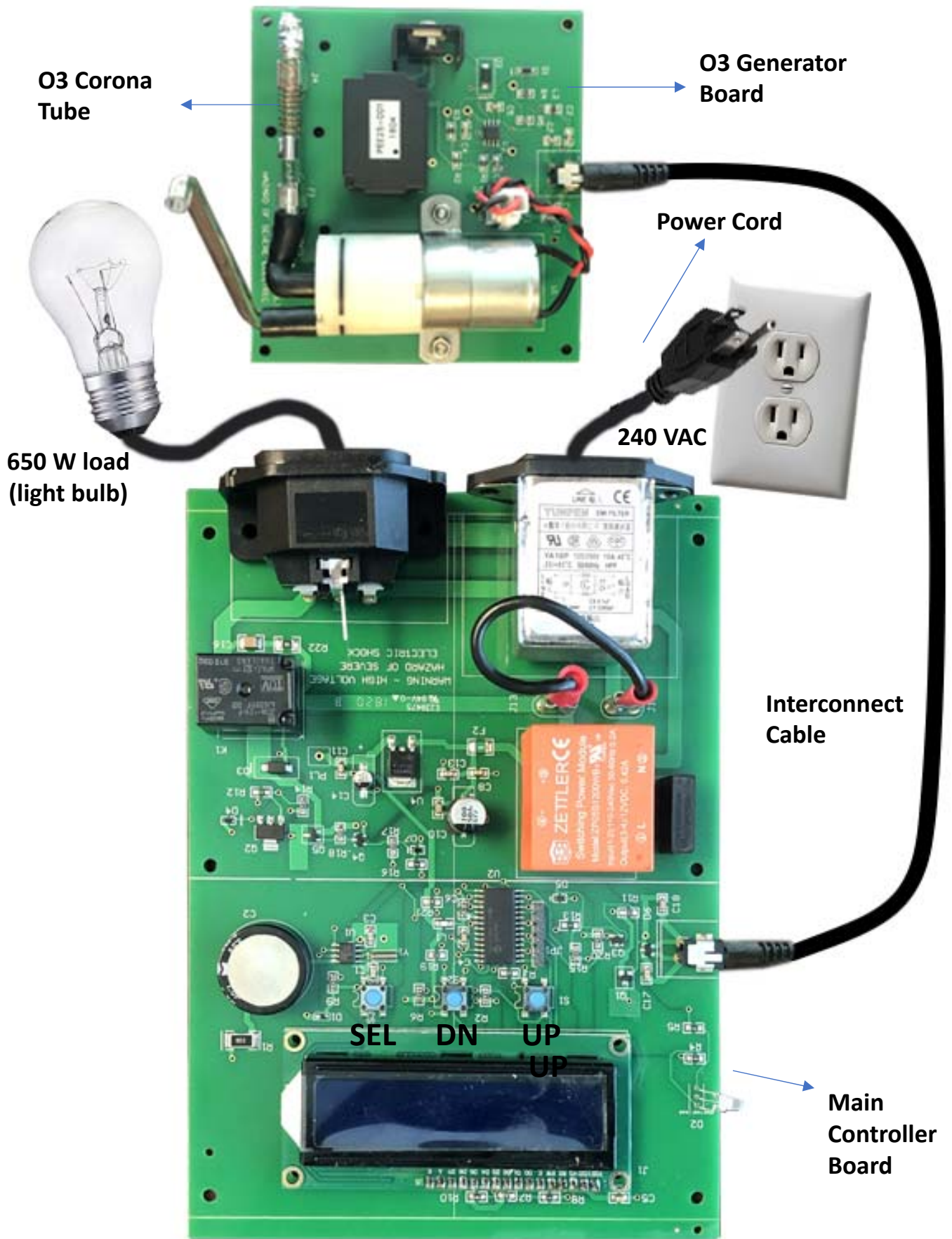


Figure 1- Overall System Test

Section B – No LCD display.

1. Check AC power. Check Fuse
2. If AC power is OK, using a multimeter measure the voltage between the points (Fuse F2 and GND) as shown in figure
3. The measured voltage should be between 11.65 V – 12.5V
4. If the measured voltage is not within the range replace Main Controller Board.

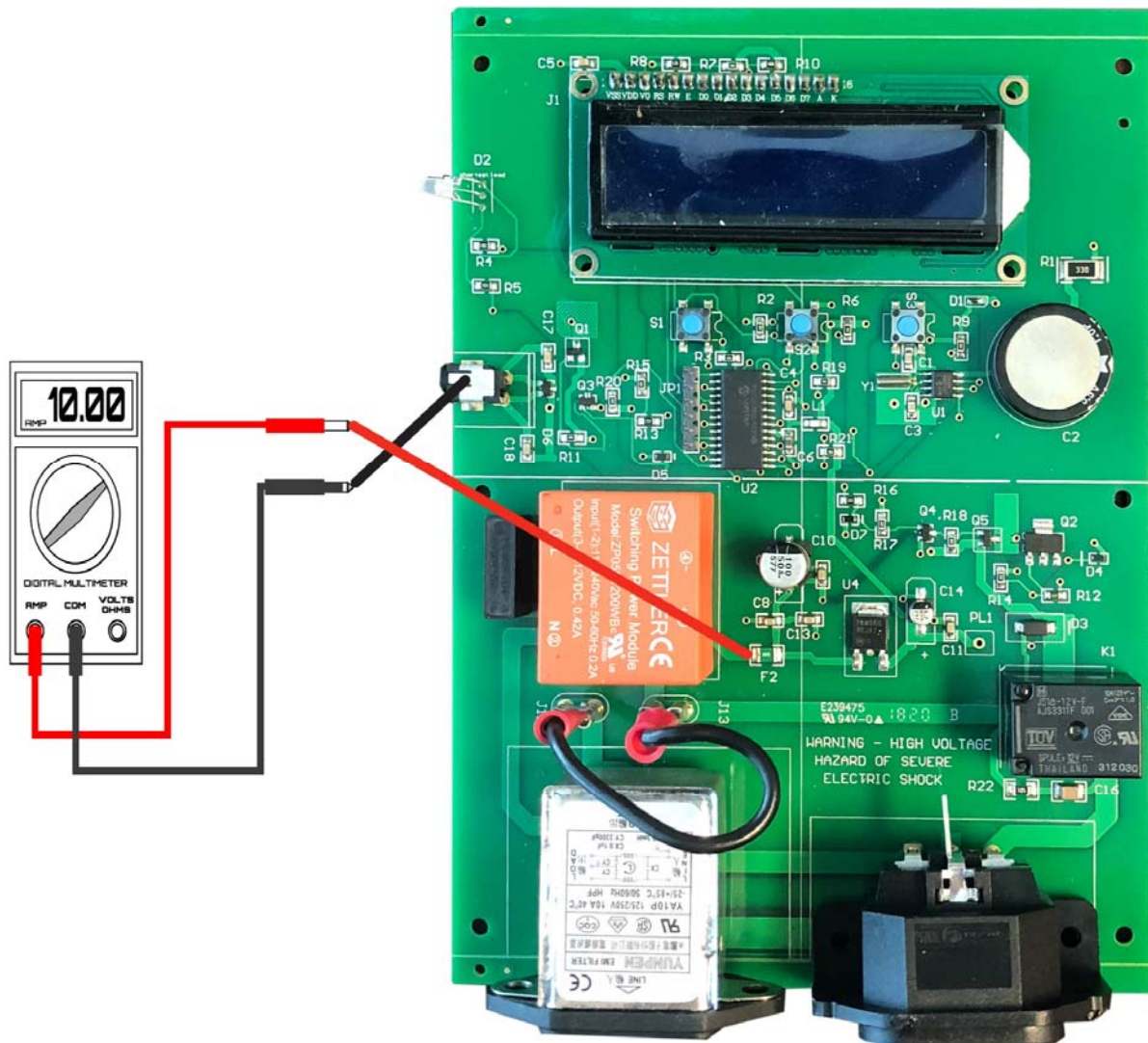


Figure 2 – LCD display test

## Section C – LCD display flicker/Relay clicking noise

1. Disconnect the interconnect cable and if the flicker/clicking noise goes away then check the following:
  - a. O3 Corona tube electrodes shorted. The coil winding is touching the 2 electrodes. Move the coil about  $\frac{1}{4}$ " and reconnect the interconnect cable and check again for the LCD display flicker/relay clicking noise.
2. Replace the interconnect cable and check if the problem goes away.
3. If the problem still persists, replace the small O3 Generator board.

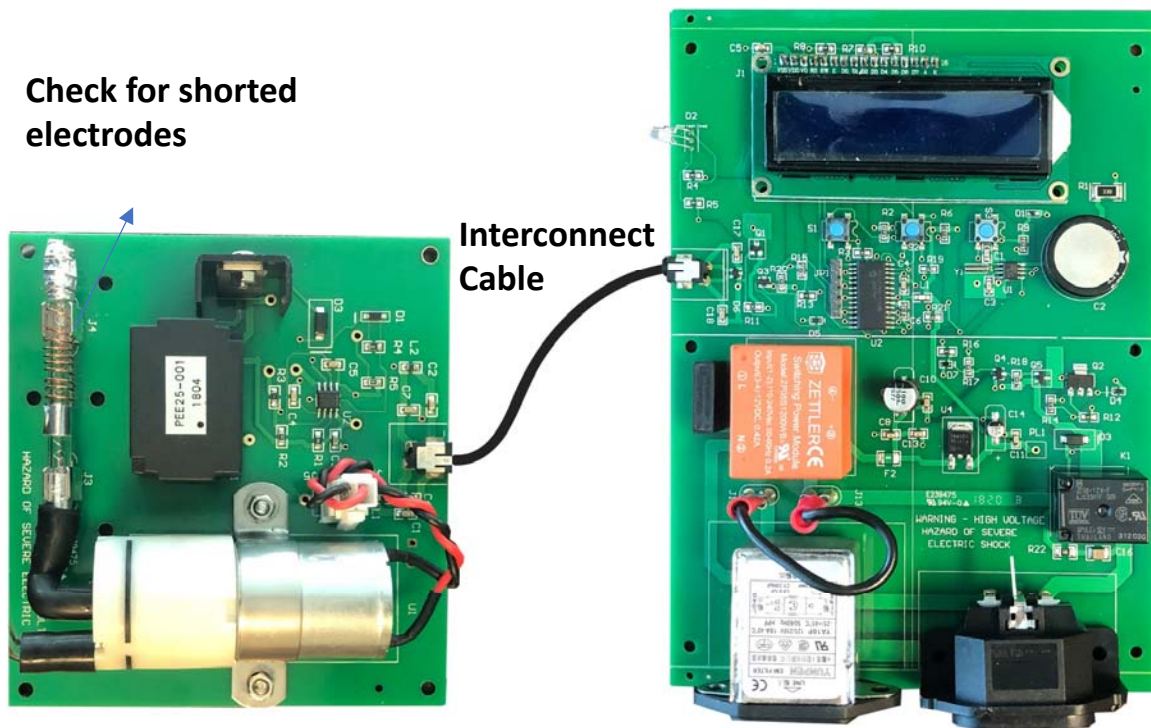


Figure 3 – LCD Flicker/Relay clicking noise troubleshooting

## Section D – Air Pump does not turn on

1. With the unit programmed to turn the Air pump ON, unplug the Air Pump connector and measure the voltage across the Air Pump connector leads. The measured voltage must be between 11.5 V – 12.5V.
2. If the voltage measures OK, replace the air pump.
3. If there is no voltage present, replace the interconnect cable and re-check the voltage.
4. If the problem still persists, replace the Main Controller board and check if the problem goes away. If not, replace the small O3 Generator board.

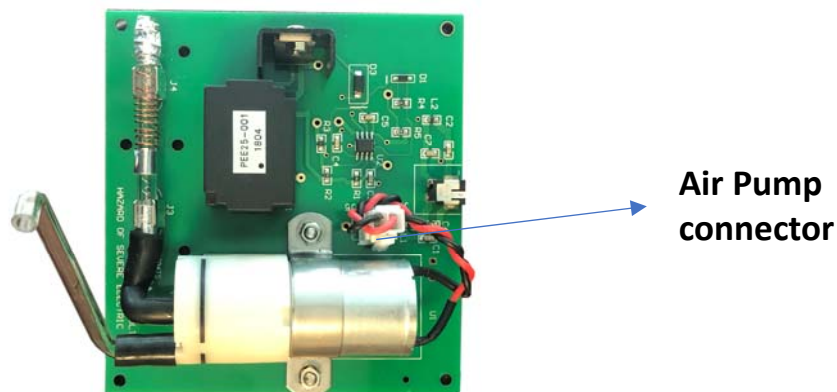


Figure 4 – Air Pump Test

## Section E – No Ozone production

1. Check all connections – O3 rubber tubing, O3 corona tube, Power cable, Interconnect cable, Air Pump and Fuse.
2. With the unit programmed to turn O3 ON, measure the 12V supply voltage to the O3 circuit as shown in figure 5. The measured voltage should be between 11.5V – 12.5V
3. If the voltage measures OK, check the O3 Corona tube for open and shorted electrodes.
4. Make sure the Air Pump is on.
5. If the problem still persists, replace the O3 Generator board.

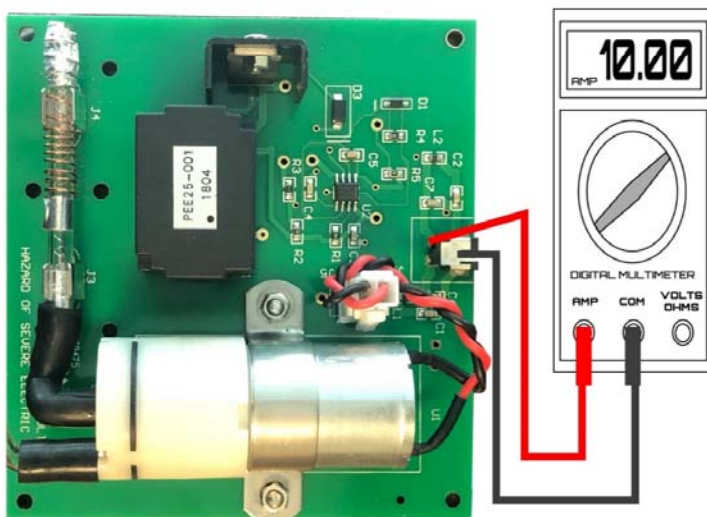


Figure 5 – O3 board test

## Section F– Clock/Calendar does not hold date and time

1. Once the clock/calendar is programmed, it will retain the values for a minimum of 10 days without any power applied.
2. If the values are not being retained, replace the 1F super capacitor as shown in figure 6.

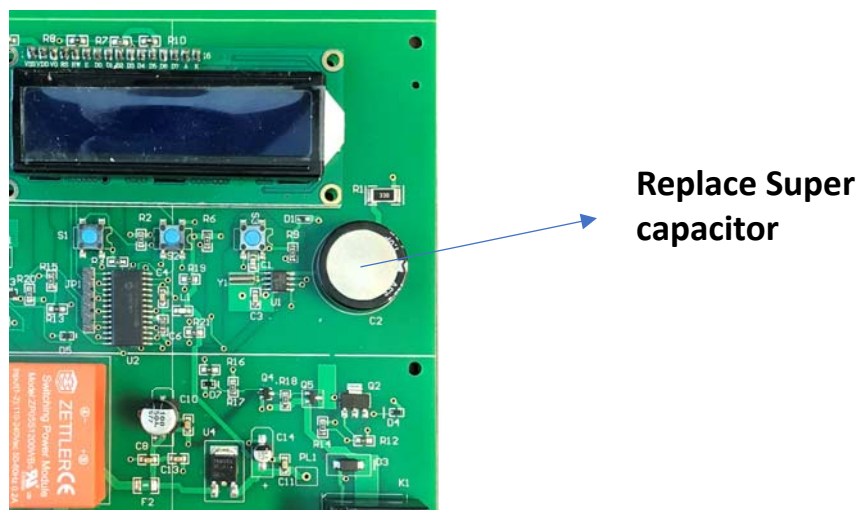


Figure 6 – Clock/Calendar supercapacitor location



## Section G– No Cooler voltage

1. Check the fuse.
2. Turn Power Off. While holding UP, DN and SEL buttons, turn Power On. Observe the Relay clicking sound. If the Relay, does not turn on replace the O3 Generator board.

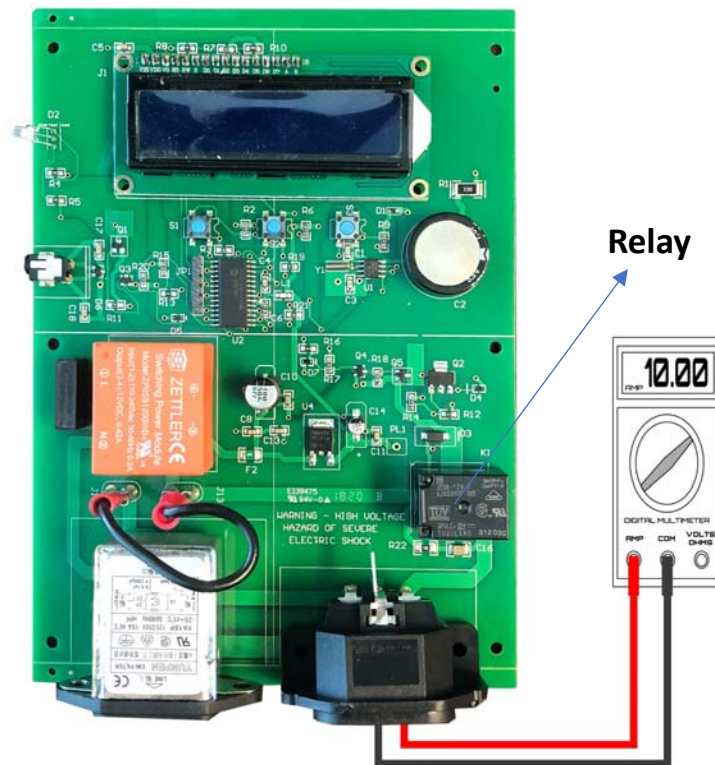


Figure 7 – Cooler Outlet Voltage troubleshooting