

# Ozone Systems

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## Electrical Interlock Box

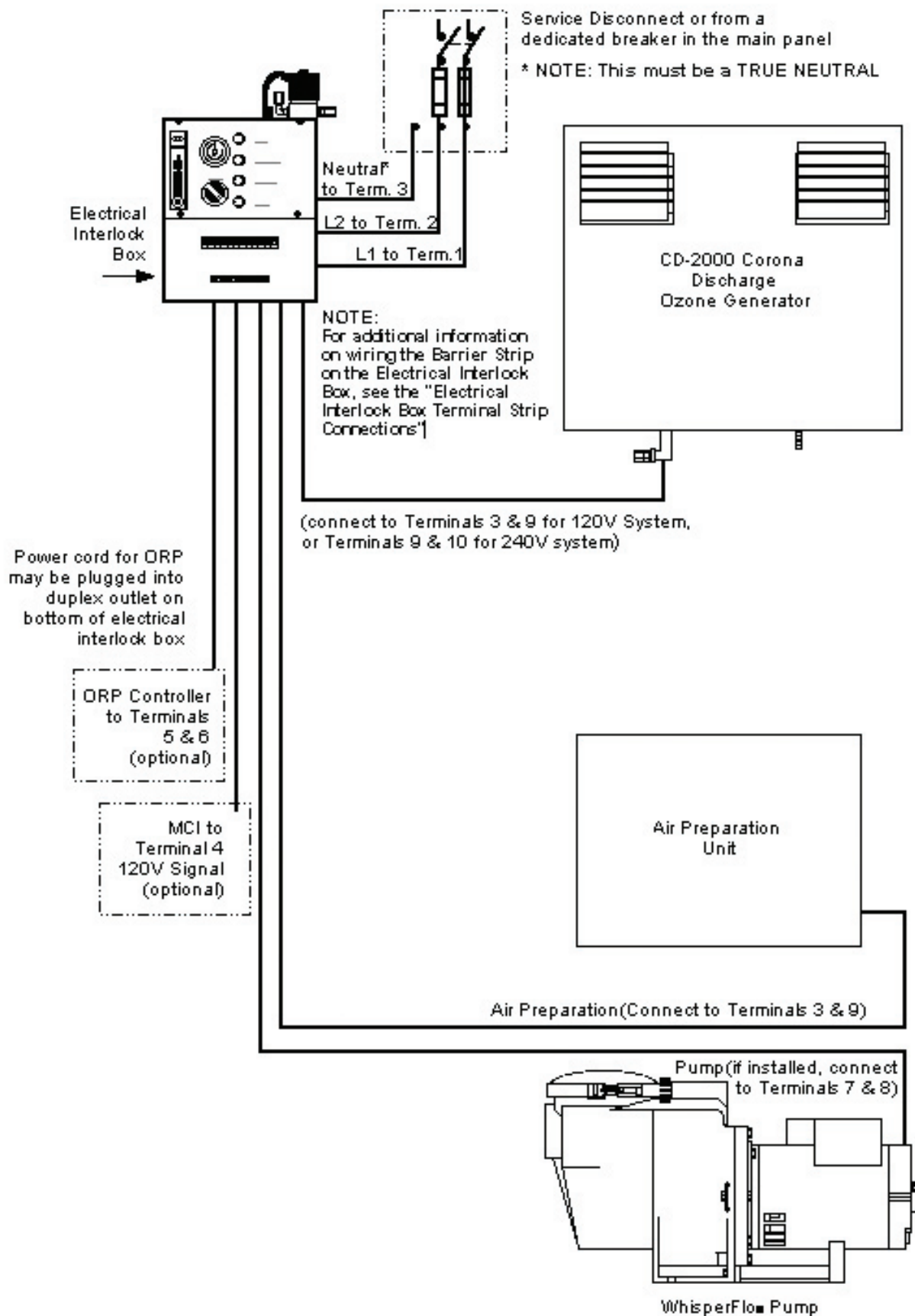
### Installation Instructions



ClearWater Tech, LLC.  
Integrated Ozone Systems

# ELECTRICAL INTERLOCK BOX WIRING CONNECTIONS

Figure 1



## Electrical Interlock Box Terminal Strip Connections

**Note: All electrical connections should be made by a qualified electrical contractor. All local, state and national codes must be observed.**

When supplied the pump, oxygen generator and ozone generator on the unit's skids are pre-wired at the factory. Follow the instructions on the next page to complete the system wiring.

### **For 240 VAC installation:**

Provide a 240 VAC, 30 AMP circuit from the service disconnect box to the 240 VAC terminals on the terminal strip located on the electrical interlock box. Use minimum #12 AWG wire, Line 1 (L1) is connected to terminal #1 and Line 2 (L2) is connected to terminal #2. The neutral is connected to terminal #3. Refer to the table on the next page for the terminal strip wiring.

### **For 120 VAC conversion/installation:**

Provide a 120 VAC, 30 AMP circuit from the service disconnect box to the unit as follows. Use minimum #12 AWG, connect the 120 V line (Hot) to terminal #1 of the terminal strip located on the electrical interlock box. Place a jumper wire between terminals #2 and #3. The neutral wire can then be connected to terminal #2 or #3. Refer to table on the next page.

Note: Be sure to ground the unit to a bonding lug on the ground bar. Continue to wire the remaining equipment as outlined and illustrated below.

Terminal 3: System Neutral - Use minimum #12 AWG. Provide a true neutral lead for this position. The system will not operate without a true neutral! Also connect the neutral lead from the oxygen generator to this terminal.

Terminal 4: MCI (Motor Control Interlock) - 120 VAC, 60 Hz. Use # 18 AWG. This is an interlock from the main circulation pump to the ozone system. Run a 120 VAC line from the motor starter to this terminal. Should this feature not be used, simply install a jumper from terminal 1 to terminal 4. Note: The unit will not function without a 120 VAC signal to this location.

Terminals 5 & 6: Oxidation Reduction Potential (ORP) Controller - 120 VAC, 60Hz. Use #18 AWG. This is control voltage only (120 VAC) from the controller to a relay integrated into the interlock box. Note: To override the ORP control signal, simply turn the ozone switch on the electrical interlock box to the ON position.

Terminals 7 & 8: Booster Pump Out terminals. Connect the booster pump between terminals #7 and #8 max 1 Hp. The booster pump will stay on in either the ON or AUTO position on the switch on the electrical interlock box.

Terminal 9: Ozone Generator Out and Oxygen Generator Out - This terminal supplies 120 V to the ozone generator and oxygen generator.

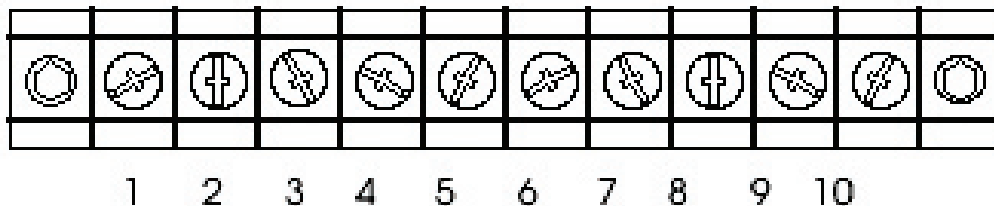
Terminal 10: Ozone Generator Out - This terminal provides the neutral to the ozone generator and oxygen generator.

The duplex electrical outlets on the bottom of the electrical interlock box are 120V 60 Hz single phase circuits and remain energized during normal operation for chemical controllers. Do not exceed 5 amps total for this circuit.

Ground the components to the grounding bar on the electrical interlock box using a bonding wire conforming with all local, state and national electrical codes (normally a #8 AWG) must be installed from the electrical interlock box to a true earth ground.

# Electrical Interlock Box Terminal Strip Connections - continued

## Terminal Strip



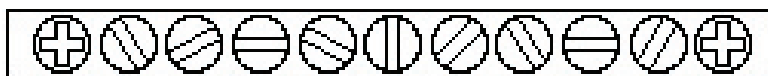
### 120 VAC Conversion

- |    |  |                  |  |
|----|--|------------------|--|
| 1  | Line in 120V                                   |                  |  |
| 2  | Neutral In                                     | (#12 AWG Jumper) |  |
| 3  | Neutral In                                     |                  |  |
| 4  | MCI In   |                  |  |
| 5  | ORP Line In                                    |                  |  |
| 6  | ORP Neutral                                    |                  |  |
| 7  | Booster Pump Out 120V                          |                  |  |
| 8  | Booster Pump Neutral                           |                  |  |
| 9  | O <sub>2</sub> /Ozone Generator Out 120 V Line |                  |  |
| 10 | O <sub>2</sub> /Ozone Generator Neutral        |                  |  |

### 249 VAC Models

- |    |  |  |  |
|----|--|--|--|
| 1  | Line in 240V (L1)                                  |  |  |
| 2  | Line in 240 V (L2)                                 |  |  |
| 3  | Neutral In   |  |  |
| 4  | MCI In   |  |  |
| 5  | ORP Line In  |  |  |
| 6  | ORP Neutral  |  |  |
| 7  | Booster Pump Line Out 240 V                        |  |  |
| 8  | Booster Pump Line Out 240 V                        |  |  |
| 9  | O <sub>2</sub> /Ozone Generator Out 240 V & L1 Out |  |  |
| 10 | O <sub>2</sub> /Ozone Generator Out 240 V L2 Out   |  |  |

## Grounding Bar



# TROUBLE SHOOTING

## ELECTRICAL INTERLOCK BOX

PROBLEM/SYMPTOM	POSSIBLE CAUSE	SOLUTION
'MAIN POWER' light not on	<ul style="list-style-type: none"> <li>- No power to electrical interlock box</li> <li>- No neutral in 120 VAC supply</li> <li>- Light burnt out</li> </ul>	<ul style="list-style-type: none"> <li>- Check power connections and breakers</li> <li>- Hook up neutral</li> <li>- Replace light</li> </ul>
'MCI' light not on	<ul style="list-style-type: none"> <li>- 120 VAC signal not connected to terminal #4</li> <li>- Light burnt out</li> <li>- No neutral in 120 VAC supply</li> </ul>	<ul style="list-style-type: none"> <li>- Jumper terminal from #1 to #4</li> <li>- Replace light</li> <li>- Hook up neutral</li> </ul>
'VACUUM SYSTEM' light not on	<ul style="list-style-type: none"> <li>- No power to electrical interlock box</li> <li>- No MCI</li> <li>- No neutral in 120 VAC supply</li> <li>- No vacuum</li> <li>- Light burnt out</li> </ul>	<ul style="list-style-type: none"> <li>- Check power connections and breakers</li> <li>- Jumper terminal from #1 to #4</li> <li>- Hook up neutral</li> <li>- Adjust injector vacuum, <i>or</i> check tubing for leaks, <i>or</i> check for proper booster pump operation, <i>or</i> turn to "OFF" and back "ON" to reset</li> <li>- Replace light</li> </ul>
'ORP' light not on	<ul style="list-style-type: none"> <li>- System set to "MANUAL"</li> <li>- No 120 VAC power to terminals #5 and #6</li> <li>- ORP level in excess of preset level</li> <li>- Light burnt out</li> </ul>	<ul style="list-style-type: none"> <li>- Switch to "AUTO"</li> <li>- Hook up power to these terminals (see manual)</li> <li>- Check input signal</li> <li>- Replace light</li> </ul>
Flow meter ball does not adjust	<ul style="list-style-type: none"> <li>- No vacuum</li> <li>- Vacuum leak</li> <li>- In and out hoses reversed</li> <li>- Defective solenoid</li> <li>- Defective check valve</li> </ul>	<ul style="list-style-type: none"> <li>- Adjust injector vacuum</li> <li>- Check and tighten fittings</li> <li>- Switch hoses</li> <li>- Inspect and repair or replace solenoid</li> <li>- Check and replace check valve</li> </ul>

# ELECTRICAL INTERLOCK BOX TUBING CONNECTIONS

Figure 2

