



**5601 Quad Controller**

- TREAT UP TO 4 ROOMS PER CONTROLLER
- PRE COOLER - RA / CA COLD STORAGE
- WORLD STANDARD UV OZONE MEASUREMENT
- SETPOINT CONTROL .05 to 2 ppm
- INDIVIDUAL ALARM OUTPUTS
- DATA LOGGED FOR PERMEANTE RECORDS
- COLOR TOUCH SCREEN INTERFACE



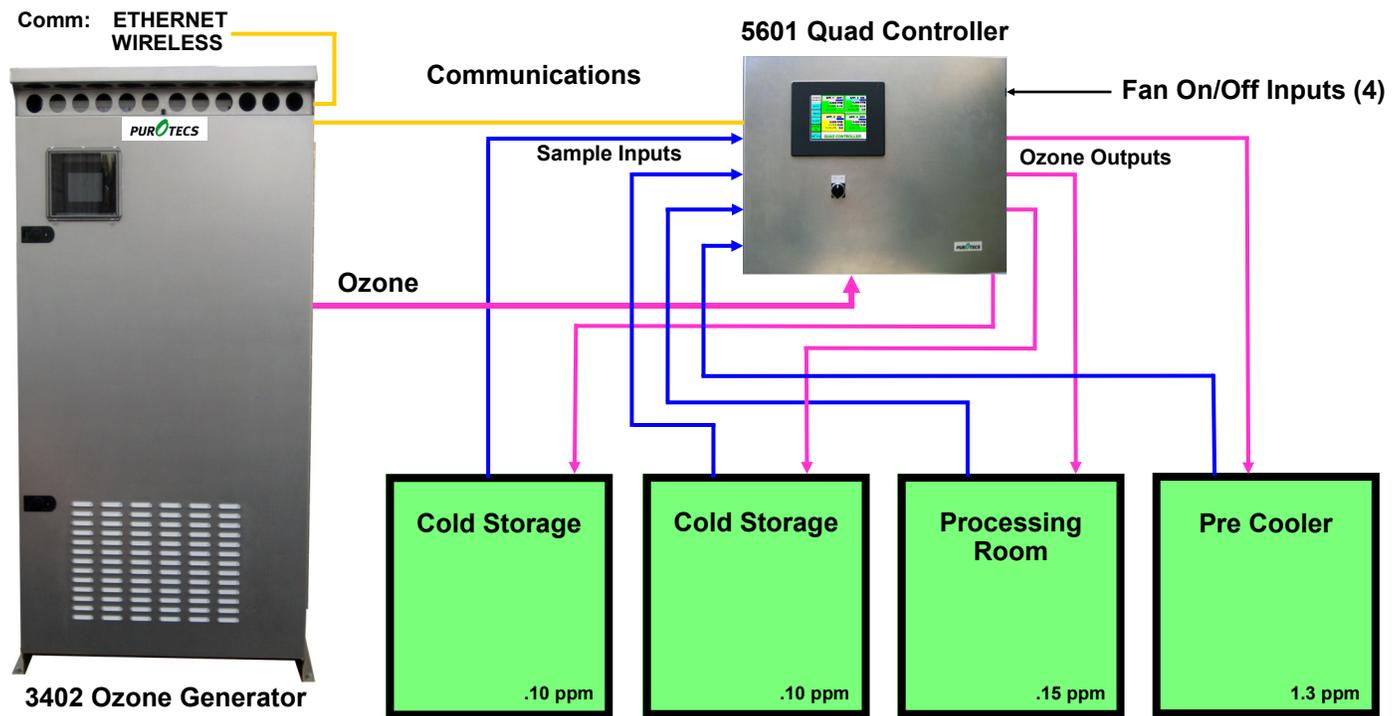
### DESCRIPTION

The PurOtecs ozone Quad Controller is the only cost-effective UV ozone monitor that provides monitoring and control for up to four independent ozone applications. Ozone is supplied continuously to RA and CA cold storage rooms destroying ethylene, retarding ripening, and controlling molds. This proven storage technology has been applied to apples, lemons, onions, kiwi fruit, berries, tomatoes, grapes, vegetables and other fresh products. Ozone applied continuously at levels between .05 to .15 ppm will significantly increase the pack-out of stored fresh products. Ozone is maintained at levels that are safe for workers who enter the rooms during treatment. Ozone in the storage facilities will reduce or eliminate the use of most post harvest chemicals. Fumigation of facilities and products is accomplished with ozone gas at levels between 2 to 500 ppm for short durations. Ozone is approved for organic products and has an FDA food additive approval for direct contact with all food products. The Quad Controller comes with two UV monitors that are compared to assure one monitor cannot cause excess ozone to be applied.

The Quad Controller utilizes proven UV absorption technology to measure the ozone levels. The gas to be measured is drawn from the area through a Teflon filter to remove particulate material then through the monitors. UV ozone measurement is the world standard for measuring ozone. The monitors recalibrates themselves several times a minute to assure the accuracy of the reading. If a discrepancy occurs between the monitors the ozone gas feed to the room is immediately suspended to prevent damage from excessive ozone and an alarm output is provided. The Quad Controller includes a PLC controller with a digital display for ozone levels, control setpoints and alarm setpoints, applications to be treated and alarm indication. The Quad Controller continuously draws the sample gas from each area to assure that the sample gas represents the ozone level for each area. An ON/OFF switch is located on the front panel to allow the operator to turn the Quad Controller on and off. The same switch also turns the ozone generator on and off. The 5601 Quad Controller includes a sequencer to select and treat up to four separate applications using the same UV sensors and four proportional control valves to feed controlled amounts of ozone to each area. The operator selections are all entered through the color touch screen. An input is provided for each area to turn the ozone feed off if the recirculation fans turn off.

### OPERATION

The Quad Controller is mounted near the areas to be treated and connected to each area with an inlet sensing line and an ozone outlet stainless steel or PVDF ozone line. A small sample pump draws air from the areas through inlet filters, the sensor manifold, the UV sensor and then through the flow meter. The system operates on standard 120V power. Data from each area is stored in the Quad Controller and is viewable on the color touch screen, via Ethernet with MODBUS, an internet connection or through a wireless Verizon modem. Ozone gas from an single ozone generator is connected to the Quad Controller providing up to 4 monitored and controlled applications. The PLC controller provides full PID control of the ozone for each active area being treated by adjusting the ozone flow through the proportional control valves.



## QUAD CONTROLLER SPECIFICATIONS

**Sensor Ozone:** UV Absorption 254nm Beer Lambert Law with auto calibration

**Range:** 0 to 1 ppm, 0 to 2 ppm

**Accuracy:** 1% of full scale

**Resolution:** < .001ppm

**Repeatability:** +/- 0.5% of full scale

**Units:** Gas - 0 to 1 ppm displayed in ppb

**Linearity:** Better than 1%

**Response time:** < 30 sec full scale

**Ozone Output flow:** 0 to 8 l/min ozone / output PID Controlled

**Sample flow:** 1.5 l/min / room

**Compensation:** Pressure and Temperature

**Inlet Filter:** 0.1 micron Teflon

**Sequencer:** 4 valves to select one to four ozone sources

**Sample Rate:** 15 seconds/room

### CONTROL

**Setpoints:** Ozone Levels, Hi/Low Alarm Levels, Sample Times, Auto/Manual/Off for each room

**Outputs:** Four PID controlled proportional ozone outlet valves, ON / OFF control signal to ozone generator

**Control:** PLC with color touch screen display, PID control for each output valve with flow indication

**Required:** Contact closure to run and contact closure from fans to disable ozone output during defrost

**ESO:** Emergency shutdown remote contact inputs

**Communication:** Ethernet MODBUS protocol, internet and wireless Verizon modem, Data logging each room

### GENERAL

**Power:** 120V - 60Hz 5 Amps

**Environmental:** 25 – 110°F (-5 - 45°C) 95% humidity non-condensing

**Enclosure:** NEMA 12 Stainless Steel

**Dimensions:** 18"H x 23.5"W x 7"D

**Ozone Output Connections:** 3/8" dual ferrule compression stainless

**Sensing Connections:** 1/4" push to fit fittings with .1 micron Teflon filter

**Weight:** 40 pounds