



# RUKS ENGINEERING LTD

Leader in IAQ presents  
Indoor/Ambient Air Ultra Low Concentration  
**Supervisory Ozone Monitor CZ12**



CZ12-PD



CZ12-AD



UL Listed - UL 867A



PATENTED

## Features

- ▶ Size: 5 7/8" (L) x 5 3/8" (H) x 3 3/8" (Depth), 149 mm (L) x 137 mm (H) x 86 mm (Depth)
- ▶ Weight: 2 Lbs (910 Gms)
- ▶ Operating Temperature, -22°F to +194°F (-30°C to +90°C), 0 to 100% RH (Non Condensing)
- ▶ Fully Factory Assembled, Ready to Start
- ▶ Metal Oxide Sensor Element rated for continuous operation
- ▶ 0-10 VDC and 4-20mA Analog Signal for BMS/BAS interface
- ▶ Relay with Normally Open (NO) and Normally Closed (NC) Potential Free Dry Contacts, rated for 250V, 10 Amps
- ▶ User Set Alarm
- ▶ Fan to draw sample air
- ▶ Failsafe Design
- ▶ Self Diagnostic Capability
- ▶ Activate Relay Contact for virtually any kind of fault
- ▶ Safe and fail proof to activate or deactivate IAQ correctional devices; Ozone Generator, Fresh Air or Exhaust Air Fan or Damper, Ionizer, Electro Static Precipitator, Heat Recovery Wheel, and Demand Load Ventilation based on outdoor air ozone, Photocopier & Printer Room. Ozone Generator Plant Rooms in Water Treatment Plants, Swimming Pools and Laundry.
- ▶ Factory provided UL Listed Power Adaptor, 100-250 VAC/12 VDC
- ▶ Circuit Board Gold Plated to prevent loss of accuracy and performance. Renders long life
- ▶ Relay Activation: Factory set at 40 PPB (can be changed at time of order)
- ▶ Warm up Time: +/- 3 Mins
- ▶ Watch Dog Circuit for self diagnosis every 2 seconds for system, components, hardware and software faults.
- ▶ 18 G Powder Coated CRS Enclosure with wall mounting plate



**Listed to UL 867A: Safety for use of duct mounted Ozone Generators for IAQ, in human occupied space**



## CZ12 is available in 2 Versions

### CZ12-AD

LED light to display;

- Green – Operation Normal
- Flashing Green – Relay On
- Red – Alarm Condition
- Amber – Malfunction

### CZ12-PD

- Continuous 24/7 display on 3 1/4" LED Monochrome Screen
- Display of Ozone Concentration from 2 PPB, in increments of 1 PPB

- Display Fault Codes for;

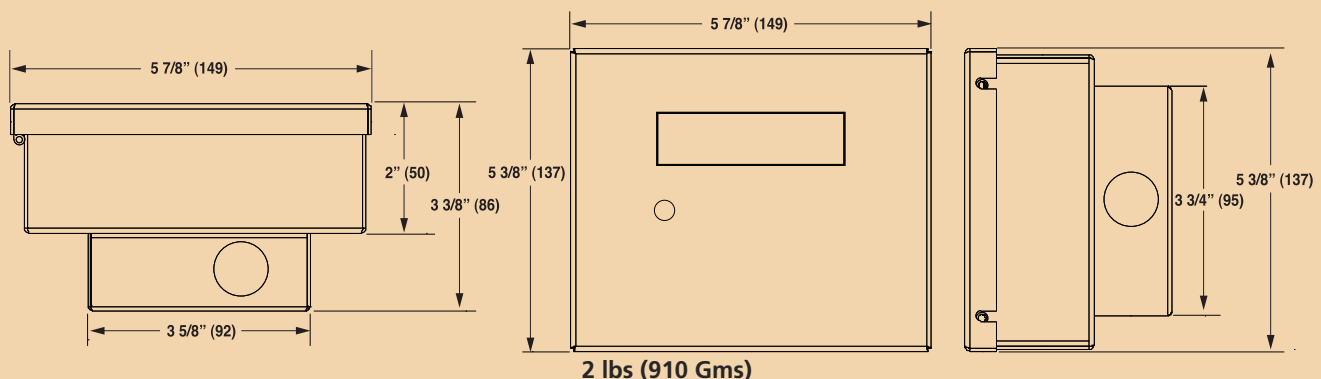
- Out of Calibration
- Self Test Failure
- Fan Failure
- Relay Failure
- Service Due

- LED light to display;

- Green – Operation Normal
- Flashing Green – Relay On
- Red – Alarm Condition
- Amber – Malfunction

## CZ12 Assembly Drawing

All dimensions are in inches (mm)



**UL Listed - UL 867A**



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Food Processing Plant



Laundry

**Suggested Applications**

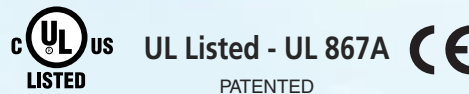
- ▶ HVAC Systems with Ozone Generators, Ionizers, Electrostatic Precipitators, UV Systems
- ▶ Laundry
- ▶ Swimming Pool
- ▶ Ozone Generator Plant Rooms
- ▶ Bottling Plants
- ▶ Food Processing Plants
- ▶ Photocopier Rooms
- ▶ Electro Static Precipitators
- ▶ Outdoor Ozone Monitoring for Demand Load Ventilation



Swimming Pool



Bottling Plant



## SUPERVISORY OZONE MONITOR CZ12 PRODUCT SPECIFICATIONS

- 1) Supervisory Ozone Monitor comprising Sensor and Controller shall be provided to track continuously 24/7 concentration of ozone in air.
- 2) Sensor Section shall comprise Metal Oxide Sensor Element rated for continuous duty.
- 3) The system shall be equipped with Watch Dog Device to perform self diagnosis; upon start of Monitor, and continuously every 2 seconds. Self diagnosis shall be performed on every component of the system including sensor, calibration, ageing and drift of sensor, hardware and software, integrity of electronic circuitry, continuity and integrity of traces in the circuit boards, and functions of microprocessor and fan for uninterrupted airflow. If any fault is detected in critical components, relay is activated to shut down the Ozone Generator and activate fresh air fan or other air quality correctional device.
- 4) The Monitor shall be provided with circulation fan to ensure continuous passage of sample room air.
- 5) The Monitor shall provide 0-10 VDC and 4-20 mA Analog Signal corresponding to Ozone Generator to BAS/BMS.
- 6) Relay Contact shall be provided with 1 NO and 1 NC potential free dry contact, rated for 250 VAC, 10 Amps (based on resistive current).
- 7) The Monitor shall be suitable for 24/7 operation.
- 8) Operating temperature of the Monitor shall be -22°F (-30°C) to +194°F (+90°C), 0 to 100% RH (Non Condensing).
- 9) For failsafe and long time operation, sensor and display circuit boards shall be gold plated to 24 Carat 3 Micron thickness. This is to reduce or prevent loss of accuracy due to oxidation of the conductor surface over time. The populated boards shall be conformal coated to prevent damage from duct, moisture, condensation, traces of acid, and ozone.
- 10) All parts and components of the Monitor shall be lead free and comply to RoHS.
- 11) UL Listed Power Adaptor 100 to 240 VAC / 12 V for power supply to Monitor shall be factory provided.
- 12) All parts and components of the Monitor shall be housed in one neat, compact, 18 G CRS powder coated satin finish enclosure.
- 13) **The Monitor shall be Listed as safe device for regulating ozone generators as IAQ system, for use in human occupied space to UL 867A. This requirement cannot be waived.**
- 14) **CZ12 Monitor is available in 2 Versions;**
  - CZ12-AD**  
Display comprises;  
LED to show
    - Green – Operation Normal
    - Flashing Green – Relay On
    - Red – Alarm Condition
    - Amber – Malfunction
  - CZ12-PD**
    - Continuous 24/7 display on 3 1/4" LED Monochrome Screen
    - Display Ozone Concentration from 2 PPB, in increments of 1 PPB
    - Display Fault Codes for;
      - Out of Calibration
      - Self Test Failure
      - Fan Failure
      - Relay Failure
      - Service Due
    - LED Light to display;
      - Green – Operation Normal
      - Flashing Green – Relay On
      - Red – Alarm Condition
      - Amber – Malfunction
- 15) The Equipment shall be of North American Manufacture, with parts and components from USA and Canada.



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INTERNATIONAL SALES AND DISTRIBUTION:

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Specifications and other details subject to change without notice

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