

R-Series

Relay Control Box

Model: R-25

Installation & Operations Manual



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IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL INSTRUCTIONS.

Read this manual completely before attempting installation.

SAVE THESE INSTRUCTIONS!



SECTION 1

Safety Precautions

Ozone is a powerful oxidizing agent. Observe strict operating procedures while using ozone equipment. **It is imperative that only ozone compatible materials are used in conjunction with the ozone system.**

Note: If the operator has asthma, he or she must not enter an airspace that has a significant ozone concentration. Ozone can induce an asthma attack.

Ensure that the Ozone Generator is in a well-ventilated area. Do not allow rain or condensation to contact the Ozone Generator. The Ozone Generator is not weather proof. The unit must be operator indoors or in an enclosure in a non-condensing environment.

Carefully review and familiarize yourself with the following important safety information concerning the Ozone Generator:

1. Ozone is an extremely aggressive and powerful oxidizer. The Occupational Safety and Health Administration (OSHA) 8-hour exposure limit is 0.10-PPM. The OSHA 15-minute exposure limit for ozone is 0.3 PPM. Above 0.3 PPM, there is the risk of damage to respiratory tissues.
2. People who have no sense of smell should not operate this equipment.
3. Never attempt to verify ozone production by directly breathing or smelling the ozone outlet or the ozone-tubing outlet.
4. The Ozone Generator contains high voltages. Unauthorized entry can result in serious injury or death. For service instructions, contact Ozone Solutions.
5. Make sure all tubing connections between the Ozone Generator and the injection point are secure and in good working condition. Failure to do so could result in the discharge of ozone into an undesired space.

Introduction

The R-25 Relay product provides a relay system designed to be controlled or switched by a suitable sensor/monitor. This gives the monitor the ability to switch on and off another device/machine which is plugged into the R-25. This R-25 relay works with almost any brand of sensor/monitor if it has a built in relay offering either a N/O, or N/C switching. This R-25 works with some of our Eco-Sensors brand sensors, models OS-1X, C-30ZX, OS-3, OS- 4, and the UV-100.

SECTION 2

Features

- ◆ 10 Amp 120V Relay output
- ◆ Wall mountable
- ◆ High Impact Plastic Case
- ◆ Provides a 24V DC power to the sensor/monitor
- ◆ Provides a normally open outlet
- ◆ Provides a normally closed outlet

Specifications

POWER: 120V/60Hz.

RELAY: 120V/10 Amps NC & NO

DIMENSIONS: 7" x 5" x 3.6" (L x W x H)

WEIGHT: 1.5 lbs.

SECTION 3

Component Diagram



Components Description

1. **Normally Closed Relay Outlet** - 110V/60Hz 10 Amps
2. **Normally Closed Relay Outlet** - 110V/60Hz 10 Amps
3. **Monitor Control/ Power Cable** - 4-conductor wire to control and power the monitor. This cable connects to the relay and powers the monitor.
4. **Power Connection** - Supply with 120V/60Hz Power by connecting to any common electrical outlet

Wire Connections

1. **Red + Black Wires** - 24V DC power cables
2. **White + Green Wires** - Relay contacts

SECTION 4

Warranty

Ozone Solutions warrants all equipment assembled, manufactured, and sold to be free from defects in material and workmanship under normal use and service for a period of one (1) year after date of sale to the original purchaser.

Some products may have a specific warranty period other than what is outlined in this document. For such products, the manufacturer warranty will supersede this warranty. Ozone Solutions will honor the manufacturer's warranty, but if and when advised by the manufacturer, may have the customer deal directly with the manufacture.

This warranty covers all parts that are not outlined in a product maintenance schedule. This warranty will be void if any piece of the equipment is used in a manner other than what is explicitly outlined in the product manuals.

If any part of the equipment manufactured by Ozone Solutions proves to be defective during the warranty period, please contact Ozone Solutions at 1-888-892-0303, or tech@ozonesolutions.com.

Prior authorization is required before working on or shipping a product back to us. Failure to get prior authorization may result in denial of your claim. Once authorized, you may return the defective equipment to Ozone Solutions with the transportation charges prepaid. If Ozone Solutions finds the equipment to be defective, it will be repaired or replaced at our discretion, free of charge, to the original purchaser (F.O.B. factory).

This warranty shall not place any liability on Ozone Solutions for any transportation charges, labor, or cost for, or during the replacement of any parts. The replaced part(s) or product will then continue the original warranty duration. The replaced parts will not start a new one (1) year coverage period.

The purchaser by acceptance of the equipment will assume all liability for the consequences of its use or misuse by the purchaser, employees, or others. This warranty shall not apply to any piece of equipment, or part thereof sold by this company which has been subject to any accident caused in transit, alterations by unauthorized service, negligence, abuse, or damage by flood, fire, or act of God.

This warranty shall constitute the entire warranty and/or agreement between Ozone Solutions and the original purchaser, and in lieu of all other warranties, expressed or implied, either oral or written, including the warranty of merchantability and fitness for a particular use and of all other obligations or liabilities on our part. Ozone Solutions neither assumes nor authorizes any other person or entity to assume for us any liability associated with the sale of its products or equipment.

The term "original purchaser," as used in this warranty, means whom the product was originally sold to by Ozone Solutions or by an authorized dealer.

Ozone Solutions reserves the right to make changes in its products without notice. Because of this, Ozone Solutions is not obligated to replace warranty defective part(s) and/or product with the same original part or product.

Contact Information

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Appendix - MSDS



SAFETY DATA SHEET [formerly MSDS]

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1. PRODUCT IDENTIFICATION	
Product Name: OZONE	
Common Names/Synonyms: Triatomic Oxygen, Trioxigen,	
Ozone Generator Manufacturer/Supplier	
Ozone Solutions, Inc. 451 Black Forest Rd. Hull, IA 51239 712-439-6880	www.ozonesolutions.com tech@ozonesolutions.com
Product Use: This SDS is limited to ozone produced in gaseous form on site by an ozone generator, in varying concentrations, in either air or aqueous solution, for the purposes of odor abatement, oxidation of organic compounds, or antimicrobial intervention, in a variety of applications.	

2. HAZARD IDENTIFICATION		
GHS Classifications:		
Physical	Health:	Environmental:
Oxidizing Gas	Skin Irritation – Category 3 Eye Irritation – Category 2B Respiratory System Toxicity – Category 1 (Single & Repeated)	Acute Aquatic Toxicity – Category I
NOTE: Severe respiratory toxicity will develop before skin or eye irritation go beyond listed categories. <i>Anyone with chronic pulmonary problems, especially asthma, should avoid exposure to ozone.</i>		
WHMIS Classifications: (Workplace Hazardous Materials Information System, Canada): C, D1A, D2A, D2B, F Source: CCOHS CHEMINFO Record Number 774		

3. COMPOSITION	
Chemical name	Ozone
Common names	Triatomic oxygen, trioxigen
Chemical Formula	O ₃
CAS Registry Number	10028-15-6

4. FIRST AID MEASURES			
Route of Entry		Symptoms	First Aid
Skin Contact	YES	Irritation	Rinse with water
Skin Absorption	NO	NA	NA
Eye Contact	YES	Irritation	Rinse with water, remove contacts
Ingestion	NO	NA	NA
Inhalation	YES	Headache, cough, heavy chest, shortness of breath	Remove to fresh air, provide oxygen therapy as needed
<i>For severe cases, or if symptoms don't improve, seek medical help.</i>			

5. FIRE FIGHTING MEASURES
Ozone itself is not flammable. As a strong oxidant it may accelerate, even initiate, combustion, or cause explosions. Use whatever extinguishing agents are indicated for the burning materials.

6. ACCIDENTAL RELEASE MEASURES
Turn off the ozone generator, and ventilate the area. Evacuate until ozone levels subside to a safe level (<0.1 ppm).

7. HANDLING AND STORAGE
Ozone must be contained within ozone-resistant tubing and pipes from the generation point to the application point.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
OSHA Permissible Exposure Limit: 8 hour TWA 0.1 ppm
ANSI/ASTM: 8 hour TWA 0.1 ppm, STEL 0.3 ppm
ACGIH: 8 hour TWA 0.1 ppm; STEL 0.3 ppm
NIOSH: ELCV 0.1 ppm light; 0.08 ppm moderate; 0.05 ppm, heavy Light, moderate, heavy work TWA <= 2 hours: 0.2 ppm Immediately Dangerous to Life or Health (IDLH) 5 ppm
Respiratory Protection: Use full face self-contained breathing apparatus for entering areas with a high concentration of ozone.
Engineering control: Use ozone destruct unit for off gassing of ozone.

9. PHYSICAL AND CHEMICAL PROPERTIES			
Physical state	Gas	pH	NA
Molecular Weight	48.0	Decomposition temperature	NA
Appearance	Clear at low concentration, blue at higher concentration	Evaporation rate	NA
Odor	Distinct pungent odor	Flash point	NA
Odor threshold	0.02 to 0.05 ppm; exposure desensitizes	Auto-ignition temperature	NA
Melting point	-193°C/-315°F	Relative density	NA
Boiling point	-112°C/-169°F	Partition coefficient	NA
Vapor pressure	> 1 atm	Flammability	NA
Vapor density	1.6 (air = 1)	Explosive limits	NA
Solubility in water	570 mg/L @20°C & 100% O ₃ ; 0.64 @0°C	Viscosity	NA

10. STABILITY AND REACTIVITY
Ozone is highly unstable and highly reactive. Avoid contact with oxidizable substances. Ozone will readily react and spontaneously decompose under normal ambient temperatures.

11. TOXICOLOGICAL INFORMATION	
Likely routes of exposure: inhalation, eyes, skin exposure.	
Effects of Acute Exposure: Discomfort, including headache, coughing, dry throat, shortness of breath, pulmonary edema; higher levels of exposure intensify symptoms. Possible irritation of skin and/or eyes.	
Effects of Chronic Exposure: Similar to acute exposure effects, with possible development of chronic breathing disorders, including asthma.	
LC ₅₀ : mice, 12.6 ppm for 3 hours; hamsters, 35.5 ppm for 3 hours	
Irritancy of Ozone	YES
Sensitization to Ozone	NO
Carcinogenicity (NTP, IARC, OSHA)	NO
Reproductive Toxicity, Teratogenicity, Mutagenicity	Not Proven
Toxicologically Synergistic Products	Increased susceptibility to allergens, pathogens, irritants

12. ECOLOGICAL INFORMATION
The immediate surrounding area may be adversely affected by an ozone release, particularly plant life. Discharge of ozone in water solution may be harmful to aquatic life. Due to natural decomposition, bioaccumulation will not occur, and the area affected will be limited.

13. DISPOSAL CONSIDERATIONS
Off-gassing of ozone should be through an ozone destruct unit which breaks ozone down to oxygen before release into the atmosphere.

14. TRANSPORT INFORMATION
NOT APPLICABLE, as ozone is unstable and either reacts or decomposes, and must be generated at the location and time of use.

15. REGULATORY INFORMATION
SARA Title III Section 302 EHS TPQ: 100 lbs.
SARA Title III Section 304, EHS RQ: 100 lbs.
SARA Title III Section 313: > 10,000 lbs. used/year.
Source: EPA List of Lists

16. OTHER INFORMATION
Half-life of ozone in water at 20°C = 20 min; in dry still air at 24°C = 25 hr; decreases significantly with increase in humidity, presence of contaminants, air movement, and/or increase in temperature.
Preparer: Dave Kuiper, Ozone Solutions
Date of Preparation: 5/1/2015

Disclaimer: Ozone Solutions provides this information in good faith, but makes no claim as to its comprehensiveness or accuracy. It is intended solely as a guide for the safe handling of the product by properly trained personnel, and makes no representations or warranties, express or implied, of the merchantability or fitness of the product for any purpose, and Ozone Solutions will not be responsible for any damages resulting from the use of, or reliance upon, this information.



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