

DESCO EMIT

50664/50665 (120V)

50671/50672 (220V)

OVERHEAD ZERO VOLT IONIZER



Installation, Operation, and Adjustment Instructions

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50664/50665 & 50671/50672 OVERHEAD ZERO VOLT IONIZER Installation, Operation, and Adjustment Instructions

The Overhead Zero Volt Ionizer combines the effectiveness of steady-state DC ionization with the ease of adjustability, communication capability and the flexibility of a micro-controller based design to produce a versatile and stable ionization system. Three fans produce extended ionization coverage and are ideal for areas where bench space is limited. (**Note:** for the 2 fan unit, disregard any instructions relating to the 3 fan unit or fan 3.

Optional network software and remote control (ZVI-IR) for adjustments are available.

Installation

Remove the ionizer from the carton and inspect for shipping damage. Included with the unit should be:

1. 50664/50665 or 50671/50672
2. AC Cord
3. Keys (to power on)
4. Hanging Kit

The AC input voltage should be set to user specification prior to shipping. It can be verified or reset by referring to the **Maintenance / Cleaning** section of these instructions.

Before installing the unit, verify that the AC outlet is properly connected to earth ground. The unit must have a good earth ground to maintain proper balance. Install the unit in the desired location, making sure that the airflow will not be restricted. Be sure the ON/OFF key switch, located on the side of the unit, is in the "OFF" position. Plug the power cord into the unit and then into the appropriate AC power source. This equipment has a grounding type plug that has a third (grounding) pin. This plug will only fit into a grounding type power outlet. If the plug does not fit into the outlet, contact qualified personnel to install the proper outlet. Do not alter the plug in any way.

Setup and Operation

The unit is powered on and off by the enclosed keys. The key switch is located on the left end of the unit. The RS485 input/output ports for the optional ZVI software package are also located on the left end of the unit. The control buttons along with the LED display are located on the side of the unit. The control buttons are numbered left to right as shown in

Figure 1. Button #1 (τ) corresponds to “Go Back”, button #2 (θ) corresponds to “Decrease”, button #3 (π) corresponds to “Increase” and button #4 (υ) corresponds to “Go Forward”.

When the ionizer is first powered on, the unit will display its default address “000”.

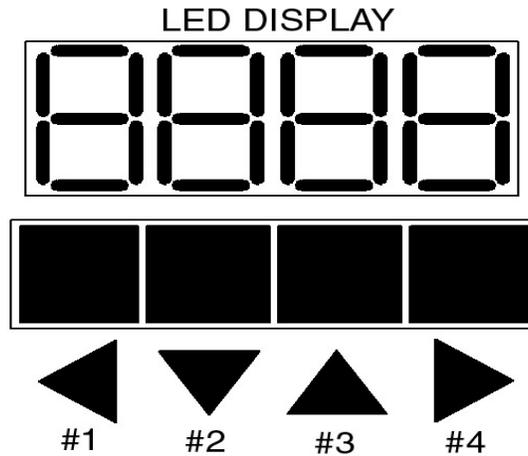


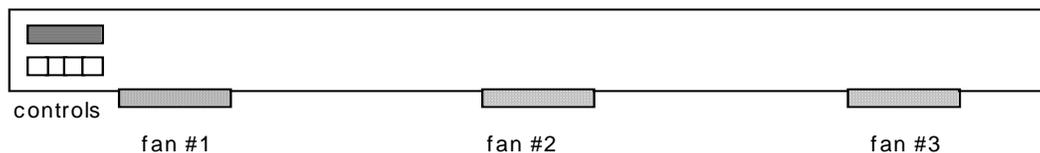
Figure 1

Setup Mode

- P r o g** Press τ and υ buttons simultaneously to go into the ionizer setup mode. When the buttons are released, the unit should beep once and “**Prog**” should appear momentarily on the LED display. The display will then show the fan speed setting.

■ ■ ■ ■
 τ θ π υ
- S P d 5** Press θ or π buttons to adjust the fan speed from “**SPd 1**” (lowest), to “**SPd 9**” (highest), for operator comfort and satisfactory decay time. Press the υ button to go to the next menu. The next menu is for the balance adjustment of fan 1.

■ ■ ■ ■
 τ θ π υ



B A L 1
■ ■ ■ ■
τ θ π υ

Place the charge plate monitor under the left fan (fan 1). Press and hold the θ button, (more negative), or the π button, (more positive), to adjust the balance under fan 1 to zero. For finer adjustment, use single clicks of the buttons. Press the υ button to go to the next menu. Press the τ button to go to the previous menu.

B A L 2
■ ■ ■ ■
τ θ π υ

Place charge plate monitor under the middle fan (fan 2). Press θ or π buttons to adjust the balance under fan 2 to zero as previously. Press the υ button to go to the next menu. Press the τ button to go to previous menu.

B A L 3
■ ■ ■ ■
τ θ π υ

Place charge plate monitor under the right fan (fan 3). Press θ or π buttons to adjust the balance under fan 3 to zero as previously. Re-check each fan and repeat BAL1, BAL2 and BAL3 adjustments as necessary to eliminate the effect of airflow interference between the fans. Press the υ button to go to the next menu.

A L 1 5
■ ■ ■ ■
τ θ π υ

Press θ or π buttons to adjust the balance alarm setting for all fans. The balance alarm can be set at ± 5V, ± 10V, ± 15V, ± 20V, ± 25V, or no alarm "Al no". Press the υ button to save adjustments and exit setup.

S A V E
■ ■ ■ ■
τ θ π υ

To save and exit at any time during the setup mode press τ and υ buttons simultaneously. The 50665 will save all settings and return to normal operation. The 50665 will display "SAVE" and the status of the buttons "On b" for "on buttons" (meaning that the buttons are enabled), then the unit address.

O n b
■ ■ ■ ■
τ θ π υ

(Note: the control buttons can be disabled, "OFF b", by the ZVI-IR remote control only.)

To change the unit network three digit address and enable/disable the remote control, use the following procedure. (Note: Address can only be 000 to 254. Address will blink, the buzzer will sound three times, and the unit will not continue to other menus until a valid address has been selected.)

1 2 3
■ ■ ■ ■
τ θ π υ

Press τ and υ buttons simultaneously to go into the ionizer setup mode.

S P d 5
■ ■ ■ ■
τ θ π υ

The unit will display "Prog" momentarily and go to the "fan speed" menu. Press the τ button to go back to the "address" menu.

1 2 4 A
■ ■ ■ ■
τ θ π υ

The last digit of the address will be flashing. Press θ or π buttons to change the last digit 0 to 9. Press the τ button to go to the second digit of the address.

1 5 4 A
■ ■ ■ ■
τ θ π υ

The second digit of the address will be flashing. Press θ or π buttons to change the second digit 0 to 9. Press the τ button to change first digit of the address.

2 5 4 A
■ ■ ■ ■
τ θ π υ

The first digit of the address will be flashing. Press θ or π buttons to change the first digit 0 to 2. Press the τ button to go to the enable/disable remote menu.

O F F r
■ ■ ■ ■
τ θ π υ

After pressing the τ button to go to the enable/disable remote menu, the display will show “**OFF r**” for “off remote”, (default setting). This means that the unit will not respond to the remote control. To enable the remote, press θ or π buttons and the display will read “**On r**” for “on remote”.

Alarm Conditions

The ionizer is able to detect numerous problems that may occur. The unit can detect low and high line voltages, out of balance conditions, maintenance cleaning conditions and inoperable high voltage supplies. It will sound a continuous tone audible alarm during all alarm conditions.

A C L
■ ■ ■ ■
τ θ π υ

If the unit detects that the AC line voltage is too low, it will display “**AC L**” and sound the audible alarm. If the unit detects that the line voltage is too high, it will display “**AC H**” and sound the audible alarm.

C L n 2
■ ■ ■ ■
τ θ π υ

Over time there will be a buildup of dirt on the emitter points if the unit is not cleaned often enough. The unit can detect that it is driving the high voltage supplies of a particular fan harder because of dirt buildup. If this occurs, for fan #2 for example, the unit will display “**CLn 2**” and sound the audible alarm. Follow the cleaning procedure below.

B A L 3
■ ■ ■ ■
τ θ π υ

The unit can detect that it cannot maintain the balance of a particular fan. If this occurs, for example fan #3, the unit will display “**BAL 3**” and sound the audible alarm.

S H d 1
■ ■ ■ ■
τ θ π υ

If the unit detects that there is something wrong with the high voltage supplies or the sense circuitry, it will shutdown the high voltage supplies of the fan for which it detected the problem. If this occurs, for example fan #1, the unit will display “**SHd 1**” and sound the audible alarm.

Maintenance / Cleaning Procedure

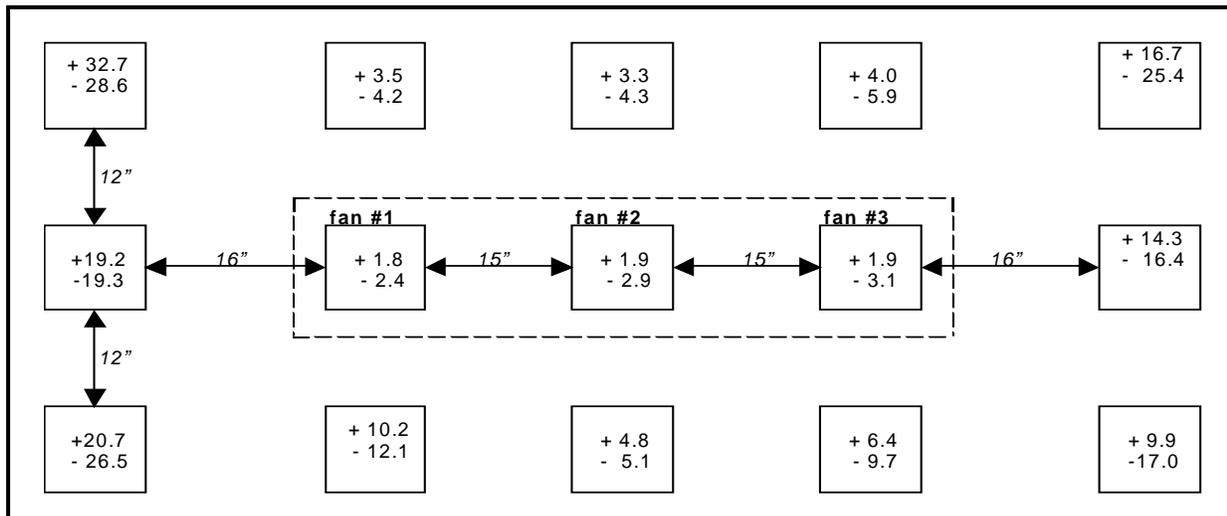
WARNING – RISK OF ELECTRIC SHOCK – These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing of internal parts unless you are qualified to do so.

The AC input voltage can be confirmed or reset by removing the top cover of the unit. The figures below show the jumper JH2 configuration for 120 and 220 VAC settings. (**Note:** the AC power cord **MUST** always be disconnected before the unit is disassembled.)

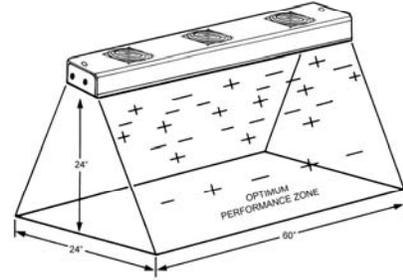
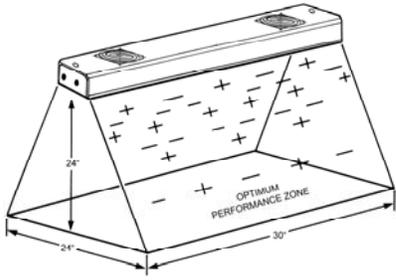


To clean the ionizer, first turn off and unplug the unit. Remove the top lid by removing the four screws with a Phillips screwdriver. Once the lid is removed, the three fan modules are easily accessible. To remove a fan module, disconnect the ribbon cable connector from the socket and lift the fan module out. The eight emitter points are easily cleaned using Semtronics part number S204-200 emitter point cleaner. To clean any dirt off of the fan and screen, using clean compressed air is recommended. Once the modules are clean, slide them back onto the posts they align with, connect the ribbon cable, and replace the lid of the unit.

Neutralization (Decay) Times



Note: Reference ESD STM 3.1-2000. The distance from the ionizer to the charge plate is 18". (Readings are typical and taken at maximum fan speed.)



Area of Optimum Charge Neutralization for 50671 and 50672

Specifications

- **Air Flow**
100 cfm each of 3 Fans.
- **Balance**
0V \pm 3 volt (typical), 0V \pm 5 volts (maximum.)
- **Dimensions**
3-1/2" D x 6-1/2" W x 42" L
- **Emitter Points**
Machined Tungsten
- **Fuse**
400 mA slow blow
- **High Voltage Power Supply**
5kV
- **Input Power**
115V AC 60Hz or 220/230V AC 50Hz Internal Jumper Selectable
- **Ion Emission**
Steady State DC
- **Ozone**
Less than 0.05ppm
- **Weight**
10 pounds

TECHNICAL SUPPORT:

USA

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Crowborough, East Sussex, TN6 3JZ, U.K.
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NOTE: Unauthorized servicing or modifications to your monitor will void the product warranty and may create dangerous conditions. Servicing should be performed only at the factory, or by a Desco EMIT approved technician.

LIMITED WARRANTY

Desco EMIT expressly warrants that for a period of one (1) year from the date of purchase, Desco EMIT 50665/50664 will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be tested, repaired, or replaced at our option, free of charge. Call Customer Service at 909-627-8178 (Chino, CA) or 01892 665313 (Crowborough, U.K.) for Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the Desco EMIT factory. Warranty replacements will take approximately two weeks.

If your unit is out of warranty, Desco EMIT will quote repair charges necessary to bring your unit up to factory standards. Call Customer Service at 909-627-8178 for proper shipping instructions and address. Ship your unit freight prepaid.

WARRANTY EXCLUSIONS

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

LIMIT OF LIABILITY

In no event will Desco EMIT or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.