EMIT TECHNICAL BULLETIN TB-6570

Pulsed Ion Bar Controller Installation, Operation and Maintenance

Made in the United States of America

Figure 1. EMIT Pulsed Ion Bar Controller

Description

The EMIT Pulsed Ion Bar Controller combines the effectiveness of pulsed DC ionization with the ease of adjustability, communication capability and the flexibility of a micro-controller based design to produce a versatile ionization system. When used with the EMIT Ion Bars, the Pulsed Ion Bar Controller uses pulses of positive and negative ions to produce extended ionization coverage with or without forced airflow.

Ionizers are useful in preventing electrostatic charge generation, ElectroStatic Discharge, ElectroStatic Attraction, as well as preventing equipment latch-up. Per ANSI/ESD S20.20 section 6.2.3.1. Protected Areas Requirement states: "Ionization or other charge mitigating techniques shall be used at the workstation to neutralize electrostatic fields on all process essential insulators if the electrostatic field is considered a threat." Air ionization can neutralize the static charge on insulated and isolated objects by producing separate charges in the molecules of the gases of the surrounding air. When an electrostatic charge is present on objects in the work environment, it will be neutralized by attracting opposite polarity charges from the ionized air. Note that ionization systems should not be used as a primary means of charge control on conductors or people. (Reference: EN 61340-5-2 clause 5.2.9).

The Pulsed Ion Bar Controller is available in two models:

Item #	Power Supply
50855	North America
50856	Asia

Packaging

1 Pulsed Ion Bar Controller
1 Ground Cord
1 Power Adapter, 24VDC
1 Certificate of Calibration

Features and Components

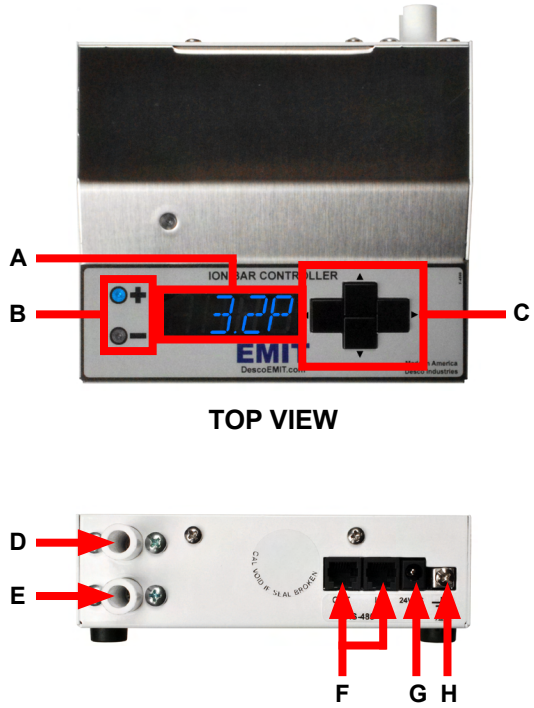

Figure 2. Pulsed Ion Bar Controller features and components

A. Display: Displays the Pulsed Ion Bar Controller's settings.

B. Polarity Status LEDs: Illuminates when positive or negative ions are being emitted from the Ion Bars.

C. Control Buttons: Use these buttons to operate the Pulsed Ion Bar Controller.
The left (◀) button corresponds to “go back”.
The down (▼) button corresponds to “decrease”.
The up (▲) button corresponds to “increase”.
The right (▶) button corresponds to “go forward”.

D. Positive High Voltage Output: Connect one of the Ion Bar input leads here.

E. Negative High Voltage Output: Connect one of the Ion Bar input leads here.

F. RS-485 Input / Output Jacks: For manufacturer use only.

G. Power Jack: Connect the power adapter here.

H. Ground Terminal: Connect the included ground cord here.

Installation

1. Place the Pulsed Ion Bar Controller nearby an EMIT Ion Bar. The Controller may be placed on top of a surface or mounted to a wall by using the mounting holes located at the bottom.
2. **Connect the ring terminal end of the included ground cord to the ground terminal on the Controller. Connect the other end of the ground cord to ground prior to operation of the system.**
3. Connect the leads from the EMIT Ion Bar to the high voltage outputs on the Controller. The leads do not have polarity and may be connected to whichever output you choose.
4. Connect the power supply to the Controller’s power jack, and plug the power supply into an appropriate power outlet in a position that is easy to reach and disconnect.
5. Upon power up, the Controller will display its default address: “000”.

ENVIRONMENTAL CONDITIONS

- Suitable for indoor use only at altitudes not exceeding 6500 ft (2Km).
- Temperature range of 41°F (5°C) to 104°F (31°C) decreasing linearly to 50% @ 104°F (40°C)
- Pollution degree 2 per IEC 664
- Installation Category II

CAUTION: If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Operation

SETUP MODE

Press the left (◀) and right (▶) buttons at the same time to enter Setup Mode. The Controller will beep once and “Prog” will momentarily display. The Controller will then display the period setting.

PERIOD SETTING

Press the down (▼) or up (▲) button to adjust the period from “0.1P” (0.1 seconds) to “10P” (10 seconds) for acceptable balance swing and discharge time. Press the right (▶) button to continue to the next setting.

DUTY CYCLE SETTING

Place a charged plate monitor under the middle of the EMIT Ion Bar. The value displayed on the Controller (XXd) represents the duty cycle. The duty cycle is the percentage of time that the positive supply is on. For example, for a period of 10 seconds, selecting a 40% duty cycle corresponds to the positive supply being on for 4 seconds and the negative supply being on for 6 seconds. Press the down (▼) button (smaller duty cycle / more negative) or the up (▲) button (larger duty cycle / more positive) to adjust the balance for an even swing. Press the right (▶) button to save and exit. Press the left (◀) button to go to the previous setting.

To save and exit any time during Setup Mode, press the left (◀) and right (▶) buttons at the same time. The Pulsed Ion Bar Controller will display “SAVE” and the status of the buttons “On b” (buttons enabled). The Controller will display its address when in normal operation.

Specifications

Operating Voltage	100-240 VAC, 50/60 Hz
Operating Temperature	32°F - 104°F (0 - 40°C)
Monitor Dimensions	4.9" x 5.7" x 1.65" (12.4cm x 14.5cm x 4.2cm)
Monitor Weight	1.6 lbs (0.8 kg)
Ion Output Voltage	±5-7 kVDC