

**AHVPS-48-1-MV**  
**14kV/40mA High Voltage Power Supply for Electrostatic Air Cleaner**  
**Specifications and Operating Manual**

---

## **1. General**

The HV Power Supply (HVPS) must be mounted indoors, protected from weather elements, in a location easily accessible by operating service personnel to enable inspection and clean up.

The HVPS board is conformal coated however accumulation of dust and lint may result in HV current leaks and degraded performance especially in high humidity conditions.

Please insure that the HCV power supply compartment is well ventilated by fan to insure air circulation.

*The board must be mounted at least ½” above conductive surface to prevent arcing.*

*Insulating pad of the size of the board is highly recommended to be installed below the board.*

The HVPS board is factory adjusted to 8kV. The adjustment range is 7.2 kV to 8.5kV. If necessary the HV can be adjusted by trim pot RV1 (labeled HV Adjust). The output current is limited to 1mA. The HV supply output power is limited to ~ 10W. The HVPS board maintains output regulation at no load condition however we do not recommend prolonged operation at no load.

The HVPS is equipped with universal input, AC/DC power supply and can operate from 120VAC or 220VAC 50/60HZ power lines.

The maximum current draw is 0.2 Amp from 120 VAC line and 0.1 Amp from 220VAC line.

Use these numbers to select proper wire gage as per applicable standards.

The HVPS can be also operated from 24 VDC power supply. Consult factory if 24VDC version only (no AC power) is preferred.

## **2. Field wiring connections**

**WARNING - RISK OF ELECTRIC SHOCK**

*These instructions are for qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than contained in the instructions unless you are qualified to do so. All wiring must be installed according to national, state and local codes.*

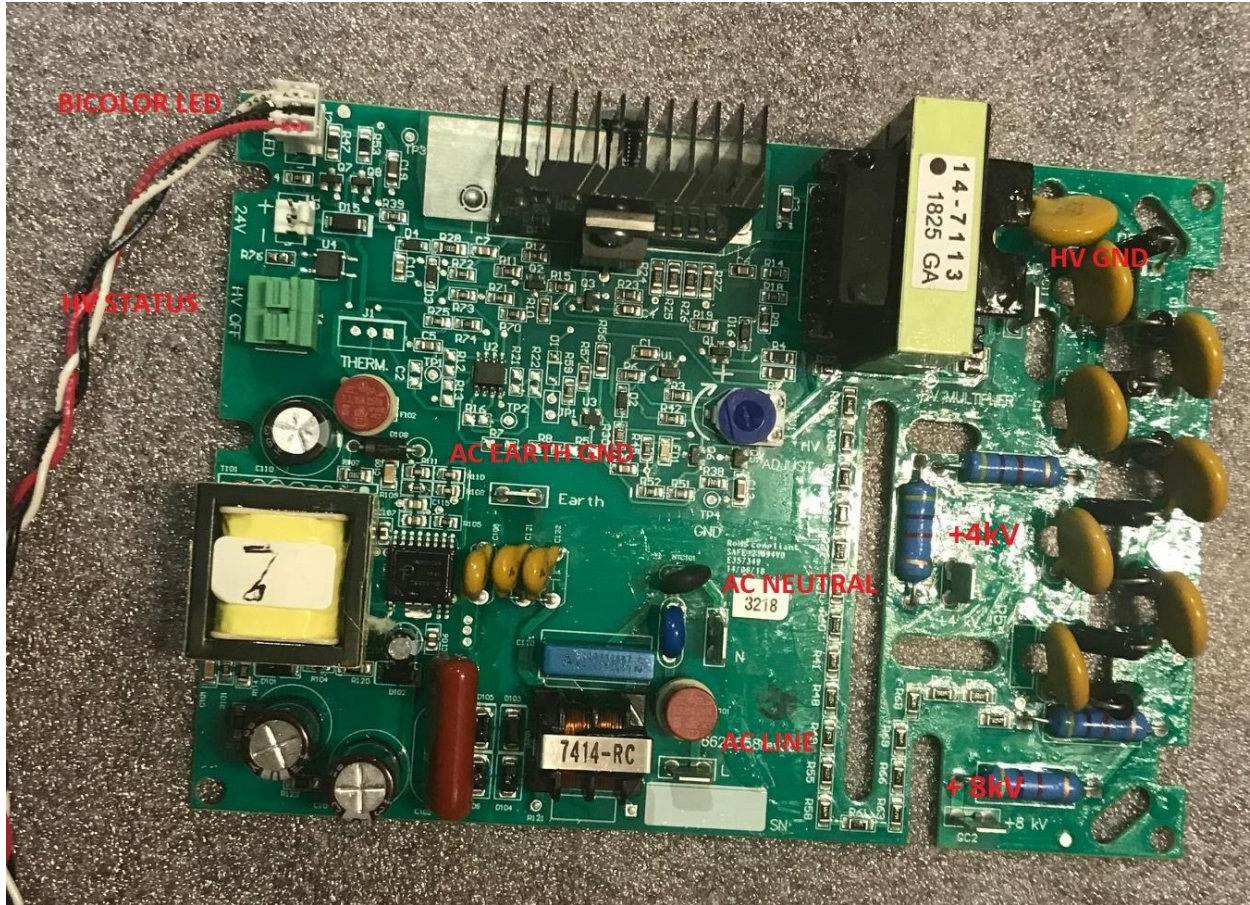


Fig.2 HV supply connecting points

The HVPS has the following field connections available:

1. AC power input (quick disconnect terminals)
2. 24V DC power input (optional, contact factory))
3. HV Connection (+8kV and +4kV quick disconnect terminals)
4. HV Status dry contacts
5. Bicolor LED indicating HV output status

Connecting points are shown in red in Fig.1 and recommended connections to load cell are shown in Fig.2.

### AC line connections

The HV power supply requires Live, Neutral and GND connection for safe operation.

Connect Live wire (black) to "L" terminal and Neutral wire (white) to "N" terminal.  
 Connect GND wire (green) to safety Earth GND screw on the chassis.  
 Connect "Earth" terminal on the HV supply board to safety Earth GND screw on the chassis.

### HV Connections

High voltage connection is made to quick disconnect terminals labelled +8kV and +4kV.  
 Connect the ionizer cable to +8kV terminal and collector cable to +4kV terminal. The HV return current closes through the **HV GND** terminal.

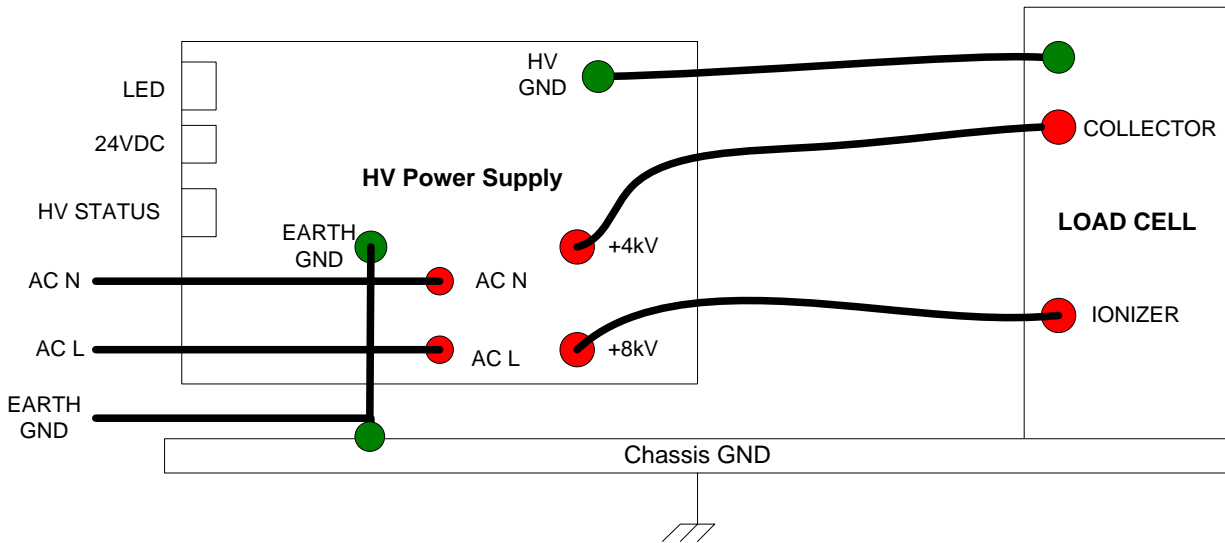


Fig.2 Recommended connections to load cell

### 3. Power – up and verification

1. Connect bi color LED cable and dry contact cable.
2. Connect the load cell, turn power ON. The bicolor LED should turn ON green and dry contacts should stay open. Using well insulated HV cable short briefly 8kV to GND and verify that bicolor LED turns red and dry contact closes.

### 3. Specifications

#### AC power input

Voltage range: 100 to 260 VAC 50/60HZ

Max current draw 0.2 A at 120 V, 0.1A at 220V

**DC power input (optional)**

Voltage range: 22 to 24V

Current draw: 0.6 A at max output power (8kV/1mA)

**HV output**

8kV at 1mA max

4kV at 1mA max (the sum of 8kV current and 4 kV current is limited to 1mA)

**HV status (dry contact, bipolar Opto MOS relay)**

Max continuous current – 50mA

Operating Voltage - 60V

Isolation -1500Vrms

Contacts open – HV present

Contacts closed – HV absent (fault)

**INDICATORS:**

|           |                            |
|-----------|----------------------------|
| LED Green | AC power on, HV is present |
| LED Red   | HV absent (fault)          |

**Mechanical Specifications**

Dimension of PCB: 4.5” W x 6.25” L x 1.5” H

Weight: 1.1 LB / 0.5kg

**Agency Approvals**

cURus, UL 867 Recognized, CE Mark, RoHS Compliance

**Manufacturer’s marking:**

P/N, Date code, serial #, at back side of PCB.