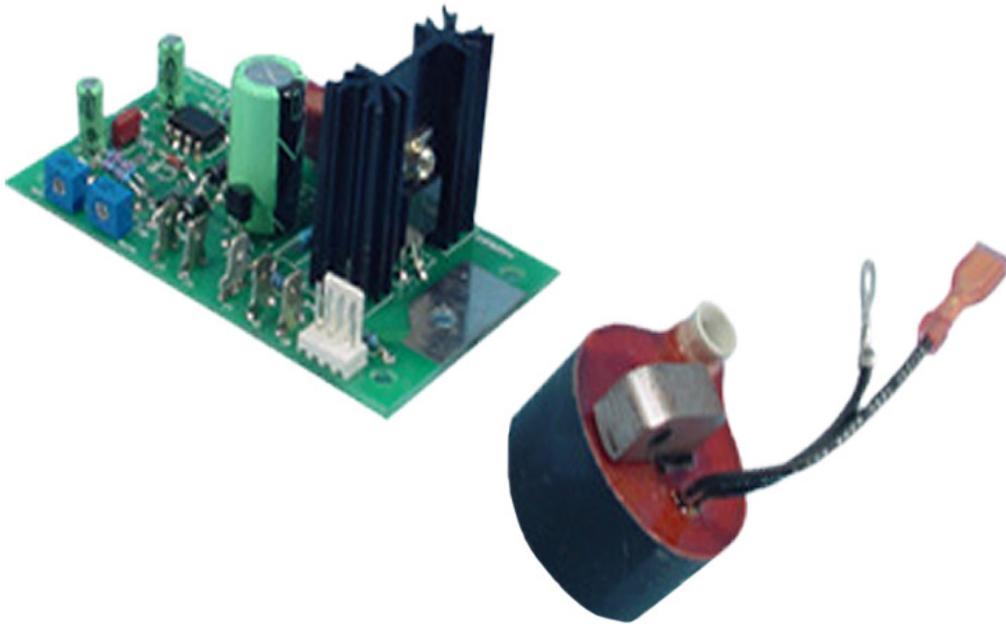


Plasma Technics, Inc.®



**INSTALLATION & OPERATION
MANUAL
HFE109 SERIES**



HFE109 application notes

HFE109: Low Voltage Solid State Drive Module and Coil

This prototyping evaluation module consists of a high voltage transformer and solid state drive. A separate wall transformer is also provided to power the system. DC input from a regulated power supply or vehicle battery can also be used to power the system. Once normal operation is determined, fusing at 150% to 200% of nominal operating current should be included in your final product.

The HFE109 module is designed to operate with in input voltage between 12 and 16 volts. In this range it will attempt to stabilize the output level so as to minimize the ozone production level variance as a function of line voltage changes. The mounting plate is also the high voltage ground and must be connected to the ozone generator ground. A high voltage wire is pushed firmly into the hole in the high voltage pulse coil and also connected to the generator. Your final assembly would require gluing the high voltage wire so as to provide mechanical security.

Connection:

1. Connect the module green wire to the generator ground **and** to the electrical service ground.
2. Push the high voltage wire (customer supplied) into the high voltage coil and connect it to the generator high voltage load.
3. Connect the terminal marked (-) from the wall power pack to module (-).
4. Connect a DC. amp meter with a range of at least 1 amp but not more than 5 amps in series with the positive module (+) terminal and power pack. The metal heat sink is electrically energized. It must be clear of any wires or other metal. If you are grounded and touch it while the unit is running you might get a shock.
5. Plug in power pack to 120v source.
6. The power pack is rated at .6 amp continuous. .6 is the long term level but .7 to .8 can occur for short periods while the controls are being adjusted.

Width:- Controls the pulse width and ultimately the high voltage output level. Increasing the pulse width increases the output voltage and also increases the DC input current. Conversely decreasing the pulse width will decrease the DC input current and high voltage level. This is a 3/4 turn pot and has a turning stop. **This is a very delicate control. Excessive torque will destroy this control.**

Rate: Controls the repetition rate of pulses (frequency). Turning the control so as to increase the frequency will increase input current, pulse repetition rate and ozone level, pulse width remains unchanged. This is a 3/4 turn pot and has a turning stop. **This is a very delicate control. Excessive torque will destroy this control.**

Suggested adjustment procedure:

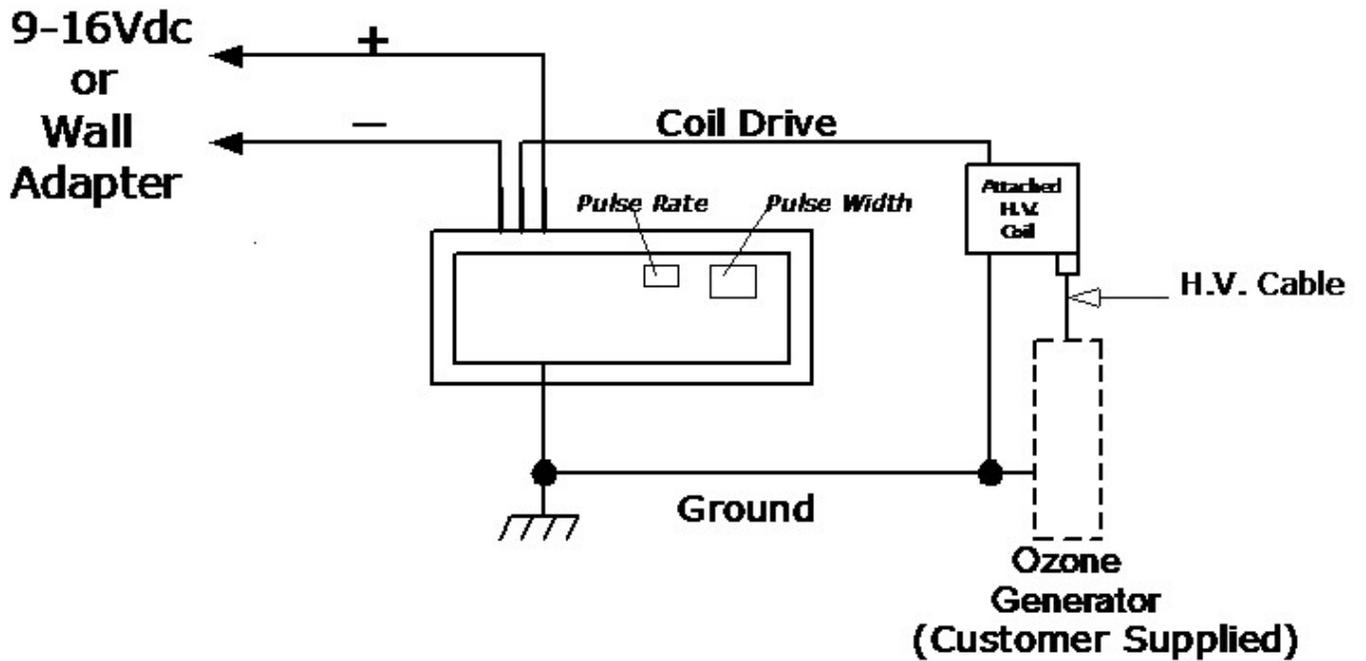
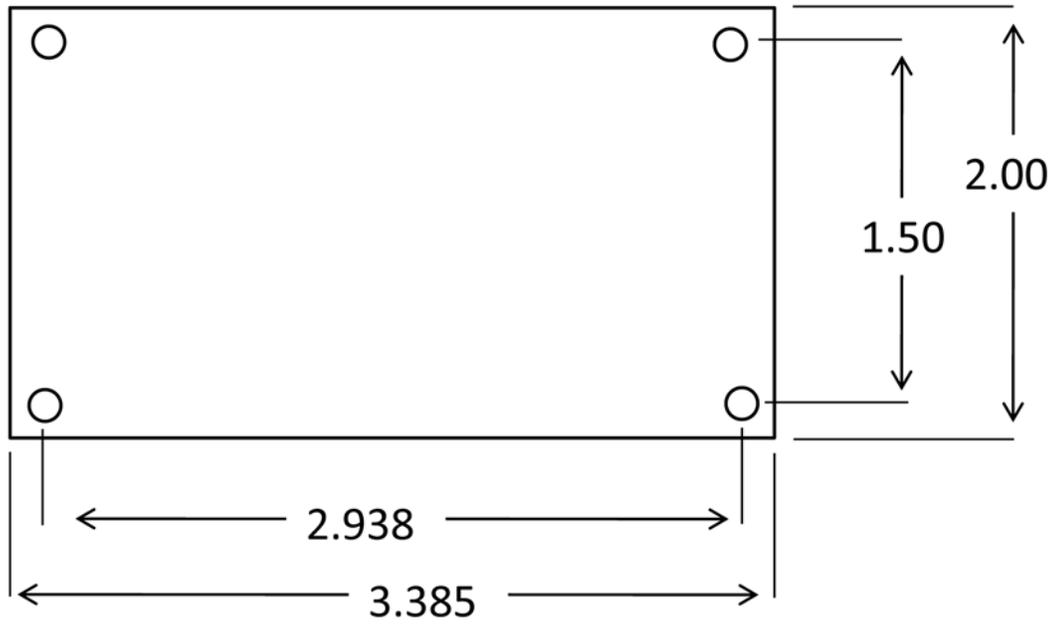
1. Turn **RATE** and **WIDTH** controls to full rotation so as to yield the minimum supply current.
2. Turn **width** about 1/2 to 3/4 of adjust range. Do not let current exceed .6 amp. Observe ozone cell corona if possible as well as ozone output level. Adjust pulse width so as to obtain the maximum corona. This will be a resonant point, which yields optimum energy efficiency.
3. Advance the **rate** until desired ozone output level is achieved while not exceeding .6 amps.
4. The maximum DC current value for a typical wall adapter like the 1415 is .6 amps. The HFE module is rated at 1 amp.

This procedure will yield the maximum from the system. If this is producing too much ozone then reduce either the width or rate controls to achieve the desired ozone level.

NOTE: The module will alter its parameter if the line voltage is changed or fluctuates. Always adjust the line to the same 120v value when testing. In establishing an ozone center value you will probably want to take ozone readings for 100, 110, 120, 130v line. If you wish, a regulated DC power supply can be used in place of the power pack in order to create a stable measurement data base. **DO NOT EXCEED 16v input.**

Production modules can be made with pots if desired, but they do add cost. Once the proper operating parameters have been determined PTI can manufacture the module preset to match your load without pots.

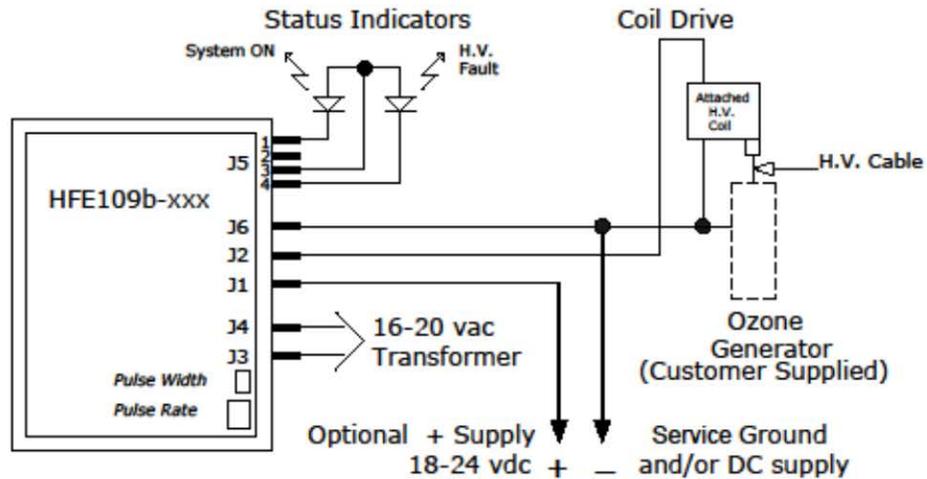
HFE109 Dimensions





Plasma Technics,

HFE109b System Connection Diagram



Notes: The status indicators are customer supplied LED's. System ON indicates supply power is applied. H.V. Fault enunciates a major fault with the high voltage load such as a shorted output or an open primary drive.

The HV fault has not been calibrated for your system.

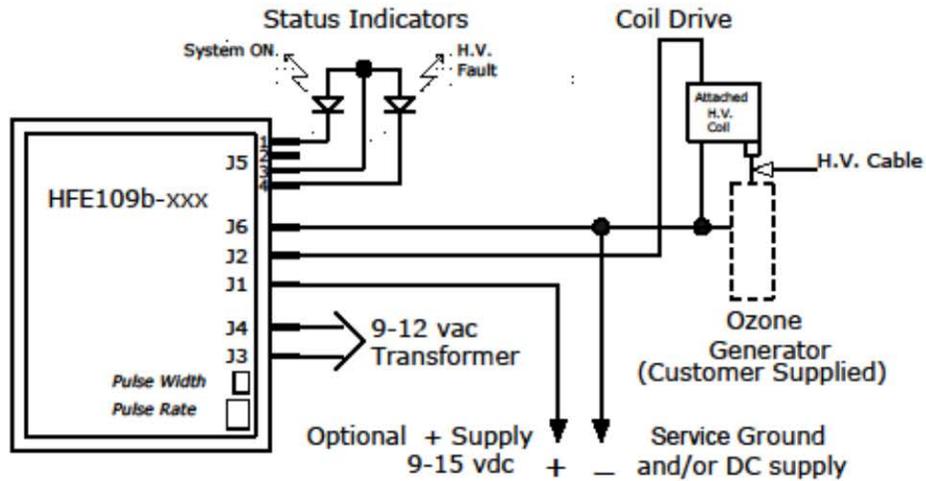
Max input current of 1a.

Connect the coil ring terminal to J6 and the spade to J2.



Plasma Technics, Inc.

HFE109b System Connection Diagram



Notes: The status indicators are customer supplied LED's. System ON indicates supply power is applied. H.V. Fault enunciates a major fault with the high voltage load such as a shorted output or an open primary drive.

The HV fault has not been calibrated for your system.

Max input current of 1a.

Connect the coil ring terminal to J6 and the spade to J2.

PTI Transformer Limited Warranty

The PTI Transformer is warranted by Plasma Technics, Inc., to the original purchaser to be free from defects in material and workmanship under normal use and service for a period of **One (1) year** from the date of purchase under the following terms and conditions:

The obligation of Plasma Technics, Inc. is expressly limited to repairing or replacing, at the option of Plasma Technics, Inc., any PTI Transformer returned to it during the warranty period, which is determined by PTI to be defective in material or workmanship.

Any improper use /operation or installation other than in accordance with the published application materials, instructions and specifications established by Plasma Technics, Inc. shall void this warranty.

The obligation of Plasma Technics, Inc. Shall not include any transportation charges, costs of removal or installation, labor charges or any direct, indirect, consequential or delay damages.

Attachment or use of components or accessories not compatible with the PTI Transformer shall void this warranty.

Any alteration not authorized by Plasma Technics, Inc. in writing, accident, misuse, abuse or damage to the PTI Transformer shall void this warranty.

The transformer subject to this warranty is not warranted as suitable for any particular purpose or use of the purchaser. The suitability of any PTI Transformer for any purpose particular to the purchaser is for the purchaser in the purchaser's sole judgment, to determine. Plasma Technics, Inc. assumes no responsibility for the selection or furnishing of a transformer suitable to the purchaser's needs or the purposes of any particular purchaser.

This warranty is in lieu of any other warranty express or implied, including specifically but without limitation warranties of merchantability or efficacy and of all other obligations or liabilities in connection with the sale or use of the PTI Transformer.