

10 Watt

- Voltage Regulated
- Output Voltages from 5kV to 30kV
- 0 to 100% Programmable Output
- Potentiometer for Manual Adjustment
- Voltage Reference Output
- Remote On/Off Control
- Short Circuit, Arc, and Reverse Polarity Protection
- Operating Temperature -10°C to +60°C
- 3 Year Warranty



Dimensions:

4000 Series:
 5kV and 20kV: 4.1 x 3.1 x 1.4" (104 x 78.7 x 35.6cm)
 30kV: 4.1 x 3.6 x 1.4" (104 x 91.4 x 35.6cm)

Key Applications:

- Cathode Ray Tubes
- Lasers and Q Switches
- Capacitor Charging
- Test Instrumentation
- Electrostatic Field Generation
- Electrophoresis

The 4000 Series are fully adjustable high voltage DC to DC converters. These units feature remote voltage programming, resistance programming, or manual adjustability via an externally accessible potentiometer. There is a 10V precision reference output available to drive the programming input. Also included is a remote on/off input. Models up to 20kV have an output voltage monitor signal.

Safety features include short circuit protection, arc protection, and input reverse polarity protection. They feature excellent EMI/RFI shielding and are equipped with two studs for chassis mounting.

Models & Ratings

Output Voltage	Output Current	Ripple	Input Current		Model
			No load	Full load	
0 to -5 kV	2.0 mA	<0.1%	<150 mA	<1 A	4050N
0 to +20 kV	0.5 mA	<0.2%	<230 mA	<1 A	4200
0 to -30 kV	0.33 mA	<0.4%	<270 mA	<1 A	4300N

Electrical Specifications

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Programming	0		100	%	V _{pgm} input, or via internal potentiometer connection
Minimum Load	No minimum load required				
Line Regulation			0.5	%	Conditions: 100% V _{pgm} , Full Load
Load Regulation			1.0	%	No Load to Full Load at 100% V _{pgm} , Nominal V _{in} .
Temperature Coefficient		200		ppm/°C	
Voltage Reference Output, V _{ref}		+10		VDC	Fixed output voltage, +10V ±0.5%
Voltage Monitor Output, V _{mon}	0		+10	VDC	0 to 10 Volts=0 to 100% Output, ±3%, on models up to 20kV
Input Voltage, V _{in}	22.8	24.0	28.8	VDC	
Programming Voltage Input, V _{pgm}	0		+10	VDC	<100µA
Remote On/Off Input	0		5	VDC	ON=0-1.7V or Ground, OFF=4-5V

Notes

1. Maximum rated output current is available at maximum rated output voltage.
2. Specifications after 1 hour warm-up, full load, 25°C unless otherwise indicated.
3. Proper thermal management techniques are required to maintain safe case temperature.

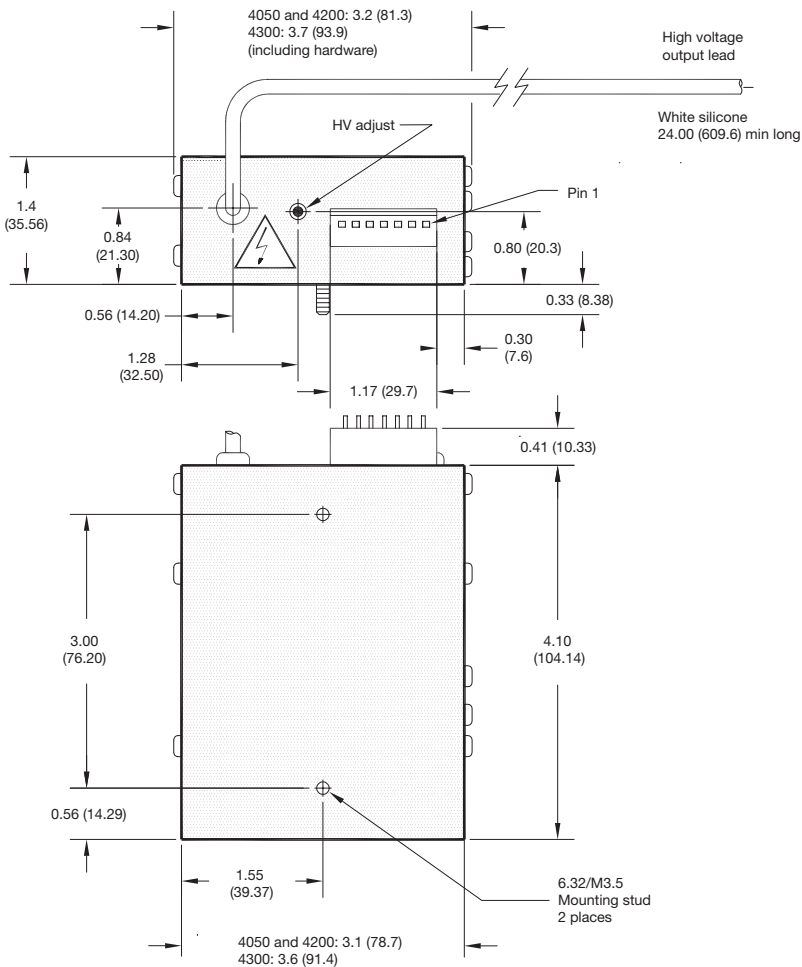
General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Isolation	N/A – Input ground is connected to output ground				
Construction	Case materials is black anodized aluminum. UL 94 V-0 rated solid vacuum encapsulation for output section				
Switching Frequency	25		100	kHz	
Mean Time Before Failure	390			kHrs	Per Bellcore TR 332 GB +25°C

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-10		+60	°C	Case temperature
Storage Temperature	-20		+90	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

Mechanical Details

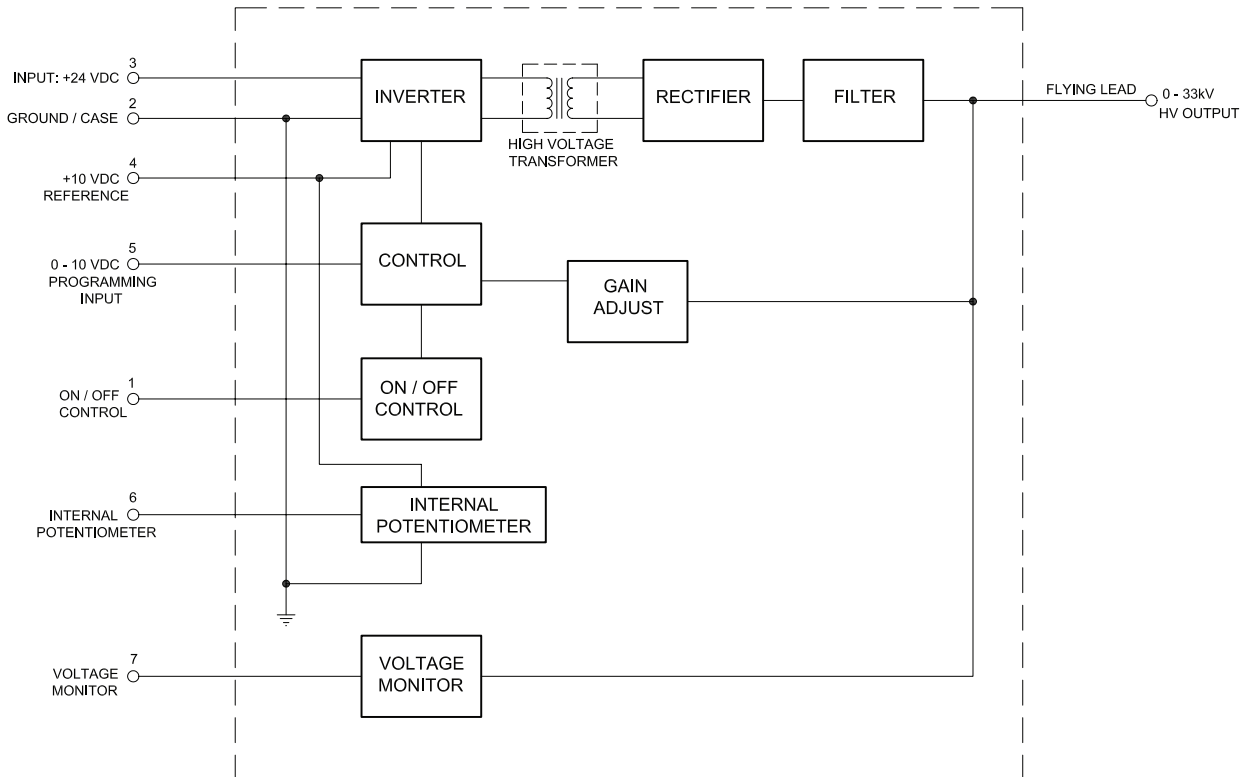


Pin	Function	Description
1	ON/OFF	ON=0-1.7V, OFF=4-5V
2	GND	Ground
3	Vin	Input Voltage +24V
4	Vref	Voltage Reference Output, +10V
5	Vpgm	Voltage Programming Input, 0 to 10V
6	POT	Potentiometer for Manual Adjust
7	Vmon	Voltage Monitor up to 20kV, No Connect for 30kV
WIRE	HV OUT	High Voltage Output

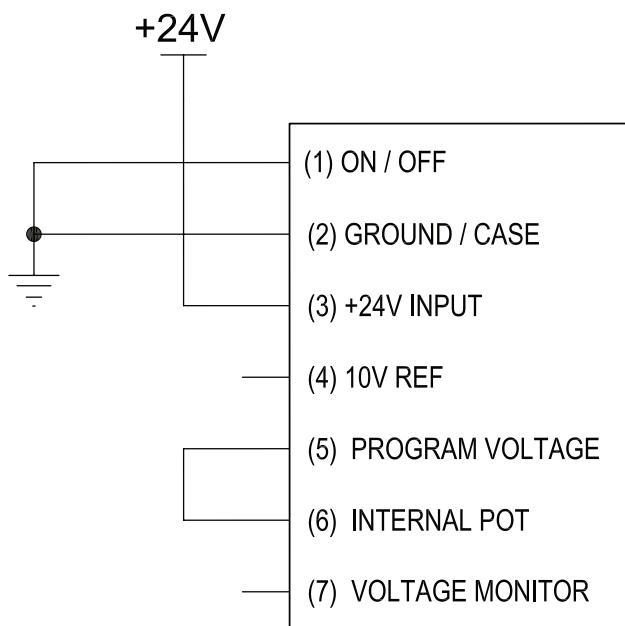
Notes

- All dimensions are in inches (cm)
- Weight: 1.5lb (675g)
- Tolerance: X.XX±0.02 (0.51)
- Pin Tolerance: ±0.005 (0.127)
- Input Connector: MOLEX HEADER 09-75-2074, Mating Connector Housing: MOLEX 09-50-3071 (Supplied), Mating Connector Terminals: MOLEX 08-50-0106 (Supplied)
- High Voltage Output Wire: 30kV 22 AWG for 5kV & 20kV models, 40kV 20AWG for 30kV models

Block Diagram



Connection Diagram



For Manual Adjustment, connect as shown below to enable the panel potentiometer.