EXELIS | APPLIED KILOVOLTS

HW Series Data Sheet

HW001, HW2.5, HW005, HW010, HW015, HW020, HW030, HW040, HW050

100W High Voltage Modules

GENERAL PURPOSE

Applications:

Lasers, Capacitor Charging, Ion Pumps, X-Ray, Ion Implantation, Magnetrons

- 1kV, 2.5kV, 5kV, 10kV, 20kV, 30kV, 40kV & 50kV
- High Frequency switch mode
- Internal control or externally programmable
- Flashover proof
- 24 hour burn in
- Safety Assessed to EN61010-1

The HW series of high voltage modules covers the range from 1kV to 50kV giving 100Watts of output power. Control of the output voltage is by internal potentiometer or by external potentiometer or by an external 10 volt analogue control voltage. Pins 1 to 10 of the 12 pin Molex input connector are pin compatible with both the high precision HP series and the general purpose KS series (please see separate data sheets).
All units are short circuit proof and include an over-current trip. The units operate from a 24V input and have an efficiency of around 80%.

O/P Current Control is now available as a Constant Current Option.

Electrical Specification

Unit Type	Output Voltage	Output Current	Ripple @ Full Load	Size (mm)	Weight (kg)
HW001	50V to 1kV	100mA	< 1V (pk to pk)	230 x 135 x 60	3.2
HW2.5	100V to 2.5kV	40mA	< 2.5V (pk to pk)	230 x 135 x 60	3.2
HW005	250V to 5kV	20mA	< 5V (pk to pk)	230 x 135 x 60	3.2
HW010	500V to 10kV	10mA	< 10V (pk to pk)	230 x 135 x 60	3.2
HW015	750V to 15kV	6.66mA	<15V (pk to pk)	230 x 135 x 60	3.3
HW020	1kV to 20kV	5mA	< 20V (pk to pk)	230 x 135 x 60	3.3
HW030	1.5kV to 30kV	3mA	< 30V (pk to pk)	280 x 135 x 60	3.5
HW040	2kV to 40kV	2.5mA	< 200V (pk to pk)	280 x 135 x 60	3.5
HW050	50kV to 50kV	2mA	< 250V (pk to pk)	280 x 135 x 60	3.5

Input:	+24 volt dc ±10% <6A. 0V input common to HV return and chassis.
Control of output	• INTERNAL potentiometer. • EXTERNAL potentiometer • 10V analogue signal. (0 to +10V gives zero to max o/p, tolerance ±2%). (Zin>440Kohm)
Voltage monitor	0V to +10V ±3% for 0% to 100%. (Zout= 10k)
Current Monitor	0V to +10V ±2%, Offset <±3% of FS for 0% to 100%. (Zout= 10k) IS Option Offset <0.1% of FS for IP Option
Temperature-Coefficient	<300ppm/°C [<50ppm/°C temp-co option available for units up to 5kV]
Line regulation:	<0.1% for a 1V change in input voltage.
Load regulation:	<0.1% for load changes from 10% to full load.
Protection	Protected against flashover to ground. Trip on over current, reset by on/off.

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Mechanical Specification

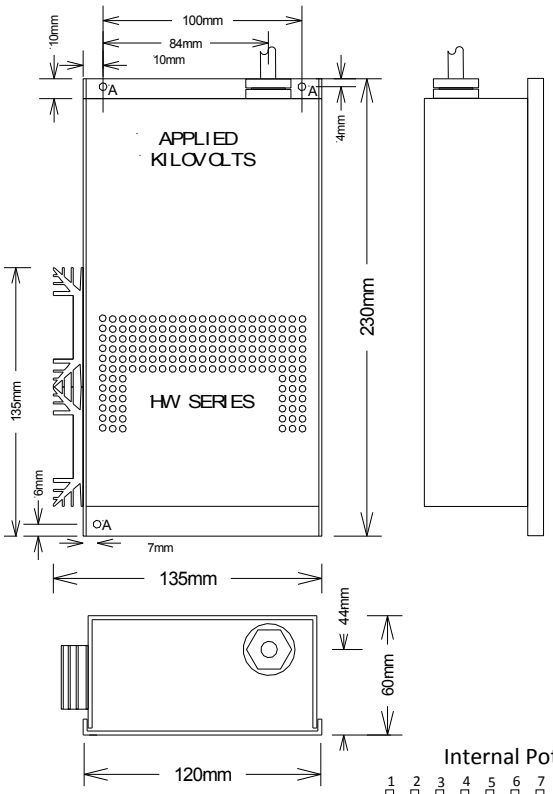
Mountings centres	3 off M3 Clearance holes.
Input / control	12 way 0.2" Molex connector
Output	0.5m of URM43 screened cable (1m TV30 HW030, & 1m TV50 HW040 & HW050)

Environmental Specification

Temperature, operating	+10 to +50°C.	Humidity (RH) <31°C non-condensing	80% maximum
Temperature, storage	-35 to +85°C.	Humidity (RH) >30°C non-condensing	Decrease linearly to 50% at 40°C
Altitude, operating	Up to 2,000m.	Altitude, storage	Up to 18,000m

The unit is to be supplied from a current limited supply providing 24Vdc, impulse limited to (overvoltage) Category I of IEC60364-4-443. For use in an enviroment of pollution degree 2.

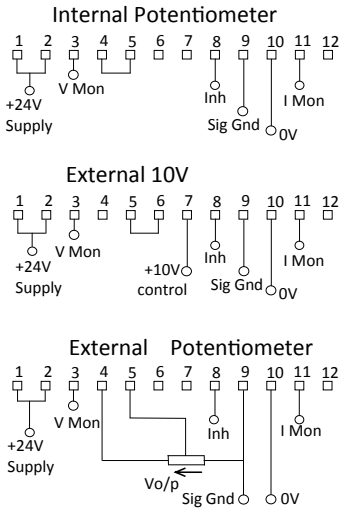
NOTE — The Inhibit input is NOT to be used as a 'Safety Interlock'



HW030, HW040 & HW050 Length increases from 230mm to 280mm

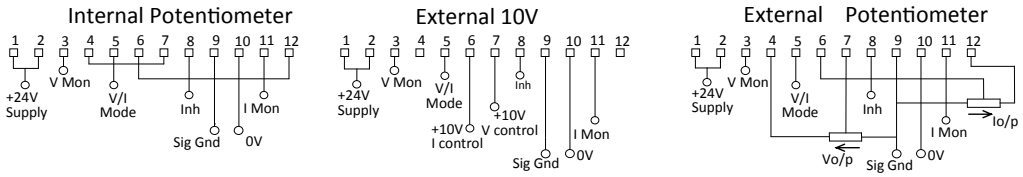
Fixing holes 'A' M4 3 off

Pin Assignment—for version without Constant Current Option



1 +24V 6A dc i/p
2 +24V 6A dc i/p
3 Voltage Monitor Zout=10k
0 to 10V represents 0 to max o/p
o/p Zout=10k
4 Control Link see diags above
5 Control Link see diags above
6 Control Link see diags above
7 Voltage Control Zin>440k
0 to 10V gives 0 to max o/p
8 Inhibit—NOT a 'Safety Interlock'
Low (<1.5V) unit operates & resets trips
High or OC unit OFF
9 0V Power return/Signal Gnd
10 0V Power return
11 Current Monitor Zout=10k
0 to 10V represents 0 to max o/p
12 nc

Pin Assignment—for version *with* Constant Current Option



1 +24V 6A dc input
2 +24V 6A dc input
3 Voltage monitor o/p
Zout=10k
4 Control Link
See diags above
5 V/I Mode o/p
6 Current Control i/p
7 Voltage Control i/p
Zin>440k
8 Inhibit i/p H or OC=OFF
NOT a 'Safety Interlock'
9 0V Power/Signal Gnd
10 0V Power
11 Current Monitor
Zout=10k
12 Control Link
See diags above

Part Number Selection

Order Code:	Series Code	o/p kV	Polarity	Options Code	Temp Co
	HW	001= 1kV Ref page 1	P= +ve N= -ve	IS= Standard Current Monitor IP = Precision Current Monitor CP= Constant Current Control	300

e.g +10kV HW series with Constant Current Control: HW010PCP300

We manufacture a large number of customized OEM versions and would be pleased to discuss your application with you.

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