

Excellence in High Voltage HW Series Data Sheet

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

100W HIGH VOLTAGE MODULES

Applications:

Lasers
Capacitor charging
Ion Pumps
X-Ray
Ion Implantation
Magnetrons

- 1kV, 2.5kV, 5kV, 10kV, 20kV, 30kV, 40kV, & 50kV
 - High frequency switch mode control
 - Internal control or externally programmable
 - Short circuit and flashover proof
 - 24 hour burn in
 - Safety assessed to EN61010-1
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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 use high frequency switching techniques, in conjunction with a ferrite step-up transformer to control the output. The units operate from a 24V input and have an efficiency of around 80%.

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

Please contact us to discuss special versions of these units

ELECTRICAL SPECIFICATION

UNIT TYPE	POLARITY	OUTPUT	RIPPLE AT FULL LOAD
HW001P	POSITIVE	50 volts to 1kV at 100mA	Better than 0.1% peak to peak
HW001N	NEGATIVE		
HW2.5P	POSITIVE	100 volts to 2.5kV at 40mA	
HW2.5N	NEGATIVE		
HW005P	POSITIVE	250 volts to 5kV at 20mA	
HW005N	NEGATIVE		
HW010P	POSITIVE	500 volts to 10kV at 10mA	
HW010N	NEGATIVE		
HW020P	POSITIVE	1kV to 20kV at 5mA	
HW020N	NEGATIVE		
HW030P	POSITIVE	1.5kV to 30kV at 3mA	
HW030N	NEGATIVE		
HW040P	POSITIVE	2kV to 40kV at 2.5mA	Better than 0.5% peak to peak, measured with 200pf load capacitance.
HW040N	NEGATIVE		
HW050P	POSITIVE	3kV to 50kV at 2mA	
HW050N	NEGATIVE		

INPUT VOLTAGE: - +24 volt d.c. $\pm 10\%$ at 6A. Negative input terminal common to HV earth return.

OUTPUT VOLTAGE: - See table.

LINE REGULATION: - Less than 0.1% for input changes of 1 volt.

LOAD REGULATION: - Less than 0.1% for load changes from 10% to maximum.
(Measured at maximum voltage).

OVERLOAD PROTECTION: - Flashover and short circuit proof. Trip on over current, reset by on/off.

TEMPERATURE CO-EFFICIENT: - 300ppm/ °C or better. (consult factory for improved temperature coefficients).

CONTROL: -

- INTERNAL potentiometer.
- EXTERNAL potentiometer
- 10V analogue signal. (0 to +10V gives zero to maximum output, tolerance $\pm 2\%$).
Input impedance nominally 200Kohm.

READOUT: - **Voltage monitor** 0 to +10V represents zero to maximum output, tolerance $\pm 3\%$ (Source resistance 10 kohm).

Current monitor (option) 0 to +10V $\pm 7\%$ represents zero to maximum current.
(Source resistance 10 kohm).

N.B. Current monitor (supplied as standard) includes the internal feedback current of about 100 μ A. Precision I monitor (available as an option) removes this current to give a true reading of load current.

OPERATING TEMPERATURE: - 0 °C to +45 °C

STORAGE TEMPERATURE: - -35 °C to +85 °C

R.F.I.: - Choke input filter. Steel case for low radiated magnetic field.

Safety: Complies with EN61010 Part 1.

Mechanical Specification

Size: All units 230 x 135 x 60mm (except HW40/2.5 & HW50/2 size 280 x 135 x 60mm).

Output: By 0.5 metre of screened cable (1 metre on HW30/3, HW 40/2.5 & HW50/2).

Weight: 1.5 kg.

Input Connector: Molex 12 pin (mating connector supplied).

Option codes are: IS=Stack return Imon, IP=Precision Imon,
CP=Constant Current o/p Control (+ Precision Imon)

e.g. HW010PIS300 is a +10kV HW unit with Stack Return current monitor