

Excellence in High Voltage

200W HIGH VOLTAGE MODULES

HX040, HX050

Applications:

X-ray
Lasers
Capacitor charging
Ion pumps
Ion implantation
Magnetrons



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- * 40 kV & 50 kV
 - * High frequency switch mode control
 - * Internal control or externally programmable
 - * Short circuit and flashover proof
 - * High efficiency
 - * 24 hour burn in
 - * Safety assessed to EN61010-1
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The 200 watt range HX series of high voltage modules covers the range from 40kV to 50 kV, they are particularly intended for X-ray applications. Control of the output voltage is by internal potentiometer, external potentiometer or by external 10 volt analogue control voltage. Control connections are by a 16 Way Ribbon. Please consult the factory if you require floating heater supplies for grounded target X-ray applications.

All units are short circuit proof and use high frequency pulse width modulated switching techniques, in conjunction with a ferrite step-up transformer to control the output voltage. The units operate from a 24 volt input and have an efficiency of around 80%.

Please contact us to discuss special versions of these units.

Electrical Specification

UNIT TYPE	OUTPUT	Ripple at Full Load
HX040PIS300	2 kV to 40 kV at 5 mA	Better than 1% peak to peak, measured with 200pf load capacitance.
HX040NIS300	-2kV to -40kV at 5mA	
HX050PIS300	3 kV to 50 kV at 4 mA	
HX050NIS300	-3 kV to -50 kV at 4 mA	

INPUT VOLTAGE: +24 volt d.c. $\pm 10\%$ at 12A. Negative input terminal common to HV earth return.

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.

Mechanical Specification

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.

Size: 40kV units 280 x 170 x 60mm, 50kV unit 300 x 170 x 60mm

Output cable: By 1 metre screened cable.

INPUT CONNECTOR: Molex (mating connector supplied). AK Order Code M12

ORDERING INFORMATION:

Series Code	o/p kV	Polarity	Options Code	Temp Co
HX	040 = 40kV	P= +ve	IS = Stack Return Current Monitor	300
	050=50kV	N= -ve	IP = Precision Current Monitor	

e.g. 40kV Positive HX with the Stack Return Current Monitor (standard unit) is HX040PIS300

Please note that a constant current version of these units is not available.

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