

Excellence in High Voltage

HC Series Data Sheet

HC010R, HC020R and HC030R

100W FAST POLARITY SWITCHING MODULES

Application:

MALDI Mass spectrometers, Nuclear instrumentation, capillary electrophoresis



- $\pm 10\text{kV}$, $\pm 20\text{kV}$ and $\pm 30\text{kV}$ types
- Fast solid state polarity switching
- Remote voltage programming
- High Stability, temp-co < 25ppm
- Voltage monitor & current monitor
- Flashover & short circuit protected

This range of high performance 100W high voltage power supplies has been specifically designed for applications where a remotely switchable polarity is required. This compact converter module employs solid state switching techniques allowing for fast polarity reversal whilst maintaining excellent line and load regulation. These modules are designed to operate from a dc supply of 24V (nominal) and provide an accurately controlled high voltage output. The use of high stability components within the feedback system ensures a low temperature coefficient and good long & short term drift making the HC series ideal for use in MALDI time of flight mass spectrometry equipment with pulsed load requirements. The output voltage may be controlled from 50V to maximum (10, 20 or 30kV) of either polarity by means of an external control voltage (0 to +10V). Monitoring of output voltage, current and polarity status are provided. Current sink & source versions are also available.

Electrical Specification

Unit Type	Output Voltage	Output Current	Ripple (pk-pk)	Temp-Co (/ degC)
HC010RAA050	$\pm 10\text{kV}$	10mA	100ppm	50ppm
HC020RAA050	$\pm 20\text{kV}$	5mA	100ppm	50ppm
HC030RAA050	$\pm 30\text{kV}$	3.3mA	100ppm	50ppm
HC0XXRAA025	As above for 25ppm equivalents			25ppm
HC0XXRPROXX	As above with potentiometer & reference fitted			

Input:	+24 volt dc $\pm 10\%$ <6A. 0V input common to HV return and chassis.
Output, voltage / current / ripple.	See table above.
Line regulation:	<10ppm for a 1V change in input voltage.
Load regulation:	<10ppm for zero to full load.
Drift (after 1 hour warm up)	<100ppm per hour, <200ppm per 8 hours
Protection	Current limit to 110% (typ) auto recovery. Protected against intermittent flashover to ground
Control of output	True differential analogue input of zero to 10V dc varies output from zero to maximum +Ve input R=100k, input range: -1V to +10V, with respect to ground -Ve input R=100k, input range: +1V to -10V, with respect to ground
Output slew rate limit	Linear ramp 500mS / 10kV (faster rate available to special order)

Electrical Specification

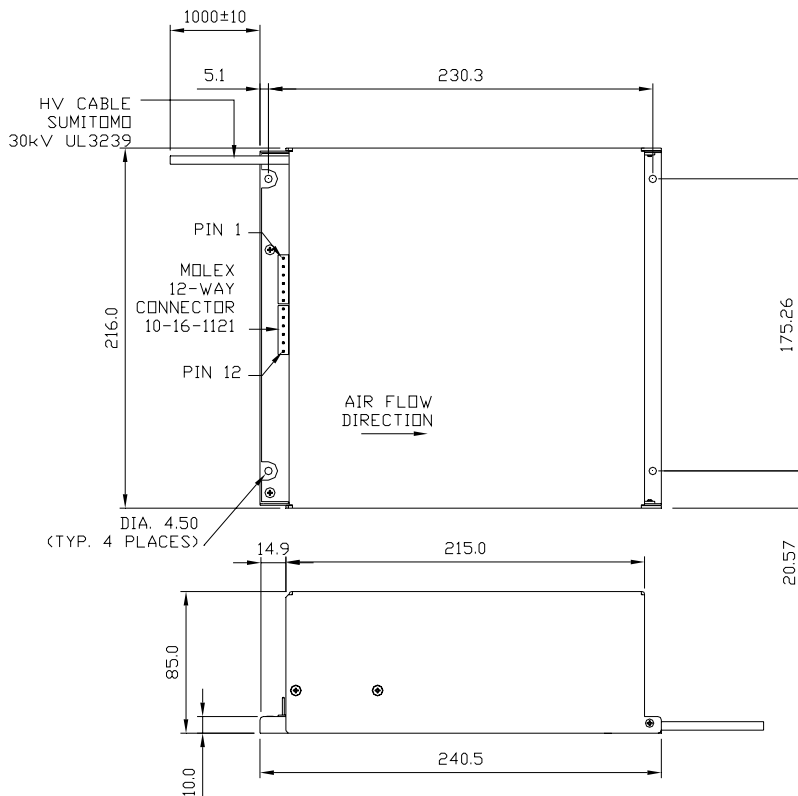
Polarity control	Negative = High (>2.5V) or open circuit. Positive = Low (<0.8V)
Polarity change time	<250mS. Between maximum rated output to maximum rated output of the opposite polarity
Voltage monitor	Zero to +10V ±2% for zero to maximum (Z= 10k)
Current monitor	Zero to +10V ±2% for zero to maximum (Z= 10k)

Mechanical Specification

Dimensions	240 x 216 x 85 mm (9.45" x 8.5" x 3.35")
Weight	3.8kg (8.3 lb) approximately
Mountings centres	230.3 x 175.6 mm (9.067" x 6.9") 4 off M4 bushes
Input / control	12 way 0.2" Molex connector
Output	Flying lead, red UL3239 screened 30kV cable, 1m long

Environmental Specification

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



Pin Assign-

- 1 Current monitor o/p
- 2 +24V dc input
- 3 Voltage monitor o/p
- 4 +24V dc input
- 5 0V Power return
- 6 Output enable
- 7 +Ve control i/p
- 8 Polarity select i/p
- 9 Signal ground
- 10 0V Power return
- 11 -Ve control i/p
- 12 Potentiometer o/p
Also see ordering information

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