



Innovator In Spectroscopy Equipment

# POSITIVE PRECISION HIGH VOLTAGE -3KV 1mA MODEL PPHV2039X



NUCLEAR INSTRUMENTS MODULE



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# POSITIVE PRECISION HIGH VOLTAGE -3KV 1mA MODEL PPHV2039X

## Features:

- Compact single width NIM package
- Regulated up to +5000 V dc 500 $\mu$ A output for negative and positive separately
- Noise and ripple  $\leq$  10mV peak to peak
- Overload and short circuit protected
- Overload, inhibit status indicators
- Inhibit and overload latching circuits
- Four digit front panel meter
- CFP Instrument Control Bus (optional)
- LAN, USB, RS232, RS485 ICB available

## Description:

The CFP Model 2039 High Voltage Power Supply is a single-width NIM module designed primarily for use with photomultiplier and electron multiplier tubes. But it can be used with any detector requiring a bias voltage up to 5000 V and a current level of 500 $\mu$ A or less.

The 2039 allows the user to select from two continuously adjustable outputs, ranging from +15 to +5000 V dc. The output voltage is measured and displayed by a four-digit voltmeter. In addition, this unit allows the user to has fully separately positive and negative output voltage polarity. The 2039 unit are fully arc and short circuit protected and will limit continuous short circuit output current to less than 150% of maximum rated output current.

## Specifications:

### Inputs

- Input Power: The Model 2039 is powered from a standard NIM Bin and power supply
- Inhibit: TTL Logic low or ground inhibits the HV outputs; max logic low  $\leq$  0.4 V; logic high  $\geq$  2.5 V.

### Outputs

- HV Output: +15 to +5000 V dc, continuously adjustable, 500 $\mu$ A output current

### Indicators

- HV Output: 4-digit panel meter 0 to 5000 V.
- Inhibit: LED indicates Inhibit status.
- Overload: LED indicates overload status.

### Controls

- ON/OFF: Front panel toggle switch enables or disables output.
- Voltage: Front panel Multi turn controls switch continuous adjustment of the output voltage.
- Remote Control: Model 2039 have provisions for remote high voltage output control via an USB port.





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## Performance

- Voltage Regulation
  - Line:  $\pm 0.001\%$  of rated output voltage for a  $+1\%$  input line change
  - Load:  $\pm 0.001\%$  of rated output voltage for a full load change
  - Ripple: See 10mVpp table
  - Stability:  $\leq 0.005\%$  per hour,  $0.02\%$  per 8 hours, after a  $\frac{1}{2}$  hour warm up
- Temperature
  - Temperature Coefficient:  $\leq 50\text{ppm}/^\circ\text{C}$
  - Operating Temperature:  $0^\circ\text{C}$  to  $+50^\circ\text{C}$
  - Storage Temperature:  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$
  - Arc/Short Circuit: All units are fully arc and short circuit protected and will limit continuous short circuit output current to less than  $150\%$  of maximum rated output current.
- Other
  - Humidity:  $20\%$  to  $85\%$  RH, non-condensing
  - Interface Connector: LAN, USB, RS232, RS485
  - Voltage: Front panel Multi turn control switch continuous adjustment of the output voltage.
  - Output Connector: SHV connector

## Electrical and Mechanical Power Required:

### Typical Power Requirements

- Standard version  $+12\text{V} - 450\text{mA}$ ,  $-12\text{V} - 450\text{mA}$

### Physical

- Size: Single width NIM module  $3.43 \times 22.12 \text{ cm}$  ( $1.35 \times 8.71$  inches) per TID-20893 (rev.) NET
- Weight:  $0.9\text{kg}$  ( $2.0\text{lbs.}$ ) - SHIPPING WEIGHT -  $2.2 \text{ kg}$  ( $4.9 \text{ lbs.}$ )

### Accessories Included

- LAN, USB, RS232, RS485 cable (opt),

### PPHV2039D Rev1.0 10015-001



Model	Out put Voltage	Out put Current	Out put Number	Ripple (Vpp)
PPHV2039	0 to +500	0 to +8ma	2 POS	5mv
PPHV2039A	0 to +1000	0 to +4ma	2 POS	4mv
PPHV2039B	0 to +2000	0 to +2ma	2 POS	2mv
PPHV2039C	0 to +3000	0 to +1ma	2 POS	6mv
PPHV2039D	0 to +5000	0 to +500µa	2 POS	10mv
PPHV2039E	0 to +7500	0 to +250µa	2 POS	100mv



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