



- **MODULAR BENCH TOP DESIGN**
- **LOW RIPPLE AND NOISE**
- **3.5 DIGIT FRONT PANEL DIGITAL METERING**
- **REVERSIBLE OUTPUT POLARITY**

[www.spellmanhv.com/manuals/230](http://www.spellmanhv.com/manuals/230)

Spellman's Bertan brand of 230 Series high voltage power supplies provide regulated high voltage outputs from 1 to 30kV. The low noise, linear topology employed results in extremely low output ripple specifications. These 12 to 15 watt units are inherently reversible by design, providing either positive or negative output polarity. The 230 Series is fully arc and short circuit protected. Excellent regulation specifications are featured along with outstanding stability performance.

### TYPICAL APPLICATIONS

HiPot Testing  
Electrostatics  
General Laboratory Usage

### OPTIONS

**F** Isolated (Floating) Output

### SPECIFICATIONS

#### Input Voltage:

115Vac,  $\pm 10\%$ , 50/60 Hertz @ 0.5 amp  
230Vac,  $\pm 10\%$ , 50/60 Hertz @ 0.25 amps  
Input voltage is switch selectable

#### Output Voltage:

See "model selection" table

#### Output Polarity:

All units are reversible polarity by design

#### Output Current:

See "model selection" table

#### Voltage Regulation:

Line:  $\leq 0.002\%$  of rated output voltage over specified input voltage range

Load:  $\leq 0.005\%$  of rated output voltage for a full load change

#### Current Regulation:

Internally set to limit at less than 125% of rated current.  
A rear panel switch allows limiting at 25% of rated full current.

#### Ripple:

See "model selection" table

#### Temperature Coefficient:

$\leq 100$ ppm/ $^{\circ}$ C

#### Stability:

$\leq 0.01\%$ /hour, 0.02% per 8 hours after a 1/2 hour warm up

#### Accuracy:

Front panel control:  $\pm(0.2\%$  of setting + 0.2% of maximum)  
Front panel Meter: Voltage  $\pm(0.5\%$  of setting + 0.5% of maximum), Current  $\pm(2\%$  of setting + 0.5% of maximum)  
Remote Programming:  $\pm(0.1\%$  of setting + 0.1% of maximum)  
Voltage Monitor:  $\pm(0.1\%$  of reading + 0.1% of maximum)  
Current Monitor:  $\pm(2\%$  of reading + 1% of maximum)

#### Front Panel Metering and Controls:

Power ON/OFF switch  
3.5 digit metering for voltage and current, switch selectable  
Polarity indicator  
10 turn locking potentiometer to set output voltage  
HV output connector  
Ground stud

#### Operating Temperature

0 $^{\circ}$ C to +50 $^{\circ}$ C

#### Storage Temperature:

-40 $^{\circ}$ C to +85 $^{\circ}$ C

#### Humidity:

20% to 85% RH, non-condensing

#### Input Line Connector:

IEC320 EMI filter/input connector, a detachable line cord is provided

#### Interface Connector:

9 pin "D" connector, a mating connector is provided

#### Output Connector:

A detachable 10 foot (3 meter) HV cable is provided for units up to 5kV; 10kV through 20kV: 59" (1.5 meter); 30kV: 10 foot (3 meter)

#### Cooling:

Convection cooled

#### Dimensions

7.63" W X 5.03" H X 8.91" D  
(194mm X 128mm X 226mm)

#### Weight:

$\leq 10$  pounds (4.5kg)

#### Regulatory Approvals:

Compliant to 2004/108/EC, the EMC Directive and 2006/95/EC, the Low Voltage Directive.

## MODEL SELECTION TABLE

230 Series	Voltage	Current	Ripple
230-01R	0 to 1kV	0 to 15mA	10mV
230-03R	0 to 3kV	0 to 5mA	30mV
230-05R	0 to 5kV	0 to 3mA	50mV
230-10R	0 to 10kV	0 to 1.5mA	500mV
230-20R	0 to 20kV	0 to 0.5mA	2 volts
230-30R	0 to 30kV	0 to 0.4mA	5 volts

## INTERFACE CONNECTOR

PIN	SIGNAL	PARAMETERS
1	Voltage Monitor	0 to 5Vdc = 0 to 100% rated voltage, Zout = 10KΩ
2	n/c	none
3	Enable	TTL "0" disables HV, TTL "1" or open enables HV
4	+5Vdc Reference	+5.0Vdc @ 10mA, maximum
5	Current Monitor	0 to 5Vdc = 0 to 100% rated current, Zout = 10KΩ
6	Voltage Program Input	0 to 5Vdc = 0 to 100% rated voltage, Zin = 1MΩ
7	Analog Ground	Ground
8	Digital Ground	Ground
9	Polarity Indicator	Open collector, 30V @ 25mA, positive = ON

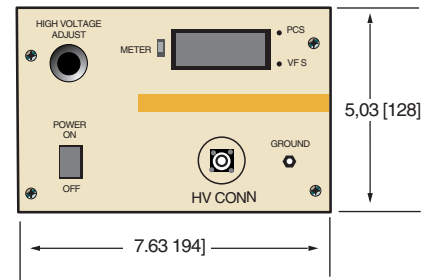
### OPTIONS:

#### Isolated (Floating) Output-Option F

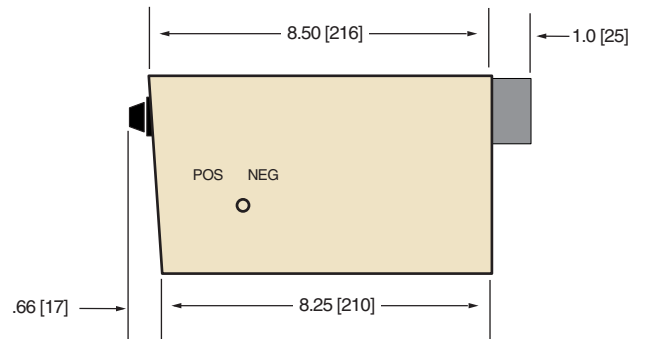
Units up to and including 5kV can be provided with differential outputs capable of floating up to ±2kV from ground. Voltage programming and monitoring functions are normally referenced to ground. Current monitoring and metering is eliminated. Replace "R" suffix with "F" for this option. Output connectors (positive, negative and ground) for 1kV and 3kV models are 3-way binding posts; 5kV model uses Spellman P/N JAC for positive and negative outputs with 3-way binding post for ground. Mating connectors are Spellman P/N PA (MHV type 1705-14)

DIMENSIONS: in.[mm]

### FRONT VIEW



### SIDE VIEW



### BACK VIEW

