



- **STANDARD RACK MOUNTED DESIGN**
- **LOW RIPPLE AND NOISE**
- **5.5 DIGIT FRONT PANEL DIGITAL METERING**
- **REVERSIBLE OUTPUT POLARITY**
- **IEEE-488 INTERFACE**

www.spellmanhv.com/manuals/225

Spellman's Bertan brand of 225 Series high voltage power supplies provide regulated high voltage outputs from 500V to 50kV. An advanced IEEE-488 digital interface, allowing comprehensive power supply control capability is included. The low noise, linear topology employed results in extremely low output ripple specifications. These 15 to 30 watt units are inherently reversible by design, providing either positive or negative output polarity. The 225 is fully arc and short circuit protected. Excellent regulation specifications are featured along with outstanding stability performance.

TYPICAL APPLICATIONS

HiPot Testing
 CRT Testing
 Electrostatics
 E Beam Systems
 General Laboratory Usage

SPECIFICATIONS

Input Voltage:

115Vac, $\pm 10\%$, 50/60 Hertz @ 2 amps
 230Vac, $\pm 10\%$, 50/60 Hertz @ 1 amp
 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: $\leq 0.001\%$ 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 105% of rated current at full output voltage. Maximum output current at any other voltage setting must be derated linearly down to 30% of maximum at zero output voltage

Ripple:

See "model selection" table

Temperature Coefficient:

$\leq 50\text{ppm}/^\circ\text{C}$

Stability:

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

Accuracy:

Current Monitor: $\pm(0.5\%$ of reading + 0.25% of maximum)
 Remote Programming: $\pm(0.1\%$ of setting + 0.05% of maximum)
 Voltage Monitor: $\pm(0.1\%$ of reading + 0.05% of maximum)
 Front Panel Meter: Voltage $\pm(0.1\%$ of setting + 0.1% of maximum)
 Current: $\pm(0.1\%$ of setting + 0.1% of maximum)
 Front Panel Control: $\pm(0.1\%$ of setting + 0.05% of maximum)

Front Panel Metering and Controls:

5.5 digit metering for voltage and current
 Power ON/OFF switch
 High Voltage ON/OFF switch
 Velocity proportional digital potentiometer and pushbuttons for inputting operational parameters

IEEE-488 Interface:

Controllable parameters:
 Voltage program, voltage limit, current limit, overload response mode and SRQ mode

Reportable Parameters:

Voltage monitor, current monitor, limit settings, mode settings, polarity and status information

Operating Temperature

0°C to +50°C

Storage Temperature:

-40°C to +85°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

GPIO Connector:

IEEE-488

Output Connector:

A detachable 10 foot (3 meter) long HV cable is provided

Cooling:

Convection cooled

Dimensions

1-20kV: 19.0" W X 3.5" H X 9.625" D
(483mm X 89mm X 244mm)
30-50kV: 19.0" W X 5.25" H X 16.0" D
(483mm X 133mm X 406mm)

Weight:

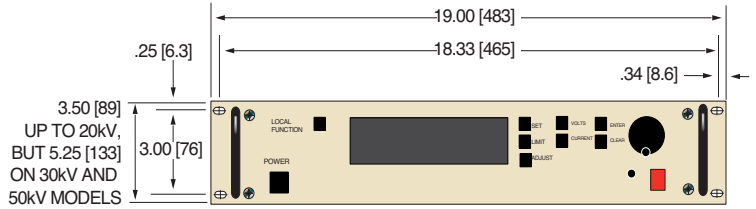
≤20 pounds (9.1kg) up to and including 20kV units,
≤35 pounds (15.9kg) for 30kV and 50kV units

Regulatory Approvals:

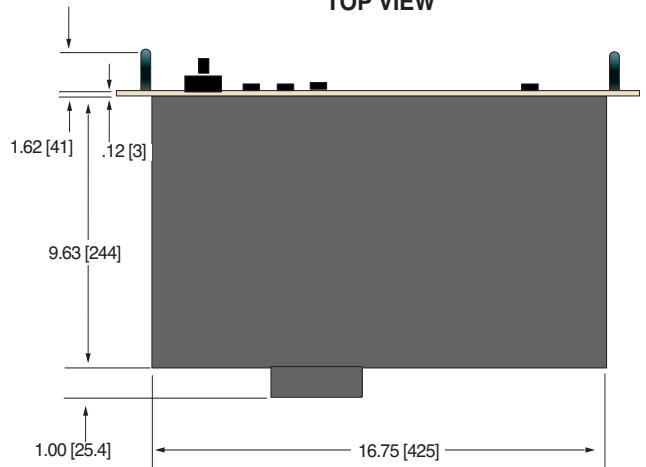
Compliant to 2004/108/EC, the EMC Directive
and 2006/95/EC, the Low Voltage Directive.

DIMENSIONS: in.[mm]

FRONT VIEW



TOP VIEW



MODEL SELECTION TABLE

225 Series	Voltage	Current	Ripple	Voltage Resolution	Current Resolution
225-0.5R	0 to 500V	0 to 60mA	10mV	100mV	1uA
225-01R	0 to 1kV	0 to 30mA	10mV	100mV	1uA
225-03R	0 to 3kV	0 to 10mA	30mV	100mV	1uA
225-05R	0 to 5kV	0 to 5mA	50mV	100mV	0.1uA
225-10R	0 to 10kV	0 to 2.5mA	100mV	1 volt	0.1uA
225-20R	0 to 20kV	0 to 1mA	300mV	1 volt	0.1uA
225-30R	0 to 30kV	0 to 0.5mA	400mV	1 volt	0.01uA
225-50R	0 to 50kV	0 to 0.3mA	2 volts	1 volt	0.01uA

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

BACK VIEW

