



Spellman's V-Pak series are high performance 10W high voltage power supplies offering a variable output voltage up to 10kV. These small modules achieve extreme ruggedness and reliability with excellent long term stability with low ripple and noise characteristics. Additionally, the V-Pak features a differential amplifier input for the voltage programming signal to improve immunity from external system noise and addresses any offset issues. A fully featured analog user interface is provided via a 9-pin D-type connector. Spellman's proprietary HV technology coupled with SMT circuitry results in a small compact and lightweight module that is available in either a positive or negative polarity output.

TYPICAL APPLICATIONS

- Photomultiplier Tubes
- Electrostatics
- Ion Guns
- Spectroscopy
- Precision Lenses
- Electron Beam
- Electrophoresis
- Image Intensifiers

SPECIFICATIONS

Input:
+24VDC \pm 0.5VDC

Input Current:
 \leq 1 Amp

Output Voltage:
Up to 10kV

Output Polarity:
Positive or Negative, specify at time of order

Output Power:
10W

Voltage Regulation:
Line: \leq 0.001% of rated output voltage over specified input voltage
Load: \leq 0.001% of rated output voltage for full load change

- **ULTRA COMPACT FOOTPRINT**
- **DIFFERENTIAL INPUT FOR OUTPUT VOLTAGE PROGRAM**
- **10 WATT OUTPUT POWER**
- **OUTPUT VOLTAGE CONTROL**
- **OUTPUT VOLTAGE AND CURRENT MONITOR**
- **HIGH STABILITY WITH ULTRA LOW RIPPLE AND NOISE**
- **10V PRECISION REFERENCE**
- **SHUTDOWN MONITOR AND CONTROL**
- **120% OUTPUT CURRENT LIMIT**

Ripple:

See model selection table

Stability:

\leq 0.01% per hour, 0.02% per 8 hours after 1.0 hour warmup period

Precision Reference:

+10V \pm 1%, 10ppm $^{\circ}$ C⁻¹. Drift <15ppm per 1000 hours

Transient Response:

0.5% maximum recovering to 0.1% in <100ms for a step change of 10% to 90% to 10% of rated load.

Protection:

Output:

- Arc and short circuit protection
- Output Voltage limited to <120% of nominal maximum
- Output current limited to <110% of nominal maximum
- Soft starting current and voltage
- Thermal protection shutdown

Input:

- Over and under voltage protection.
- Low input current protection

Temperature Coefficient:

\leq 25ppm/ $^{\circ}$ C.

Operating Temperature:

0 to 45 $^{\circ}$ C operating

Storage Temperature:

-35 to +85 $^{\circ}$ C storage

Humidity:

10% to 90% RH, non-condensing

Cooling:

Additional heat sinking required to achieve continuous operation at full power

Dimensions:

0.79"H x 2.75"W x 2.75"D (20mm x 70mm x 70mm)

Weight:

<1.1 pounds (0.5kg)

Interface Connector:

9-pin D-type connector

Output Connector:

A captive 39.4" (1m) screened flying lead

Regulatory Approvals:

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

V-PAK MODEL SELECTION TABLE

V-PAK Series	Voltage	Current	Ripple (Vpp)
VP1*10/24	0 to 1kV	10.00mA	<10mV
VP2*10/24	0 to 2kV	5.00mA	<20mV
VP3*10/24	0 to 3kV	3.33mA	<30mV
VP5*10/24	0 to 5kV	2.00mA	<50mV
VP10*10/24	0 to 10kV	1mA	<100mV

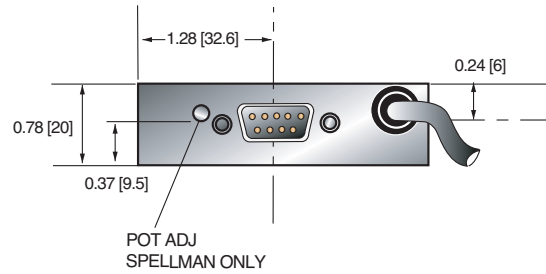
Specify "P" for positive polarity or "N" for negative polarity

V-PAK ANALOG INTERFACE— 9 PIN MALE D CONNECTOR

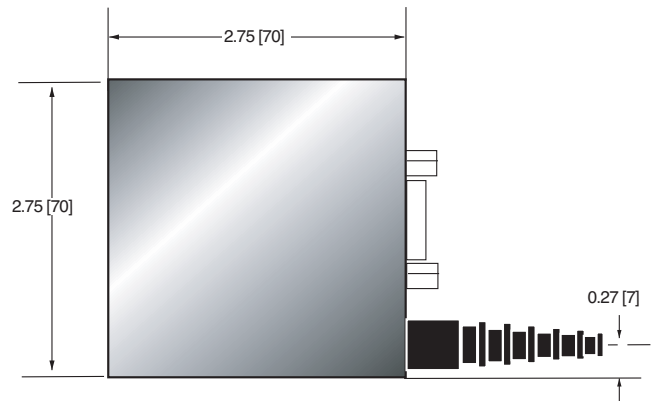
PIN	SIGNAL	SIGNAL PARAMETERS
1	Power Input Ground	0V
2	Reference Output	+10VDC
3	Voltage Control Input +	0 to +10VDC with respect to pin 4
4	Voltage Control Input -	0 to -10VDC with respect to pin 3
5	Shutdown	Bi-directional; input >5V forces shutdown Output >5V indicates shutdown condition
6	Power Input +	24VDC
7	Ground (signal)	0V
8	Proportional I Monitor Output	0 to 10V ±5%, Z=1kΩ
9	Proportional V Monitor Output	0 to 10V ±5%, Z=1kΩ

DIMENSIONS: in.[mm]

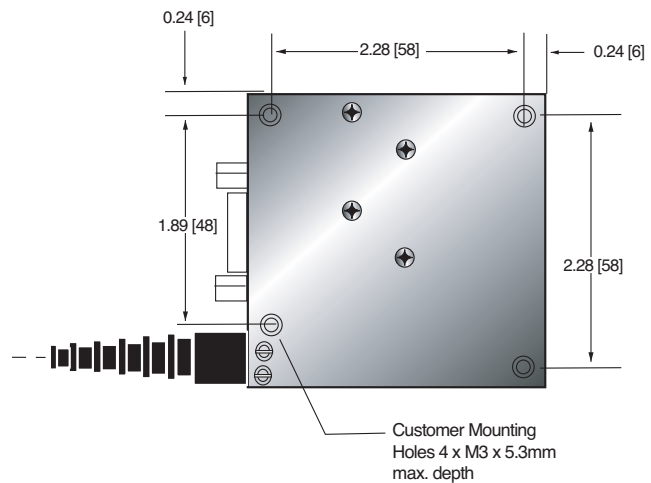
FRONT VIEW



TOP VIEW



BOTTOM VIEW



SIDE VIEW

