



"The best high voltage design solution"

# SP7250, 1W, +10kV, SPECIFICATION SHEET



**Standard Model Number : SP7250**

**RoHs Model Number : SP7250/Y**

*Standard Model is NOT RoHs Compliant*

## ELECTRICAL SPECIFICATIONS

Input Voltage .....	11.5V - 16Vdc	Onboard Precision Reference .....	5Vdc @ 1mA
Input Current .....	<150mA (No Load)	Programming Linearity .....	<1% (5% to 100% Vout)
Input Current .....	<280mA (Full Load)	Input Filter .....	Low ESR Capacitor
Output Voltage .....	0V to +10kVdc (Programmable)	Reverse Input Protection .....	50Vdc
Output Current .....	0.1mA	Short Circuit Protection .....	Continuous
Voltage Accuracy .....	+/- 1%	Switching Frequency .....	180 kHz
Line Regulation .....	< 0.1%	Calibration Adjustment .....	>1%
Load Regulation .....	<0.1%	Response Time .....	<250 ms (Full Load, full scale response)
Output Ripple .....	< 0.1% P-P	Programming Voltage Shutdown .....	> 5.2Vdc
Programming Voltage .....	0 to +5Vdc	Output Voltage Monitor .....	0V to +5V = 0 to +10kVdc
Programming Current .....	< 100uA	Output Current Monitor .....	0V to +5V = 0 to 0.1mA
		Monitor Accuracy .....	<0.5% (20% to 100%)

## GENERAL SPECIFICATIONS

Stability .....	< 0.01% / Hr.	Humidity .....	0 to 95% (Non-Condensing)
Temp. Stability .....	+/- 0.01%/°C	Thermal Shutdown .....	>85°C (Case)
Temp. (Operating , Case) .....	-10 to +70°C	Thermal Shock Limit .....	1°C / 10 Seconds
Temp. (Storage) .....	-40 to +125°C	EMI/RFI .....	Six-Sided Shield
		Derating .....	None
		Cooling .....	Free-Air Convection

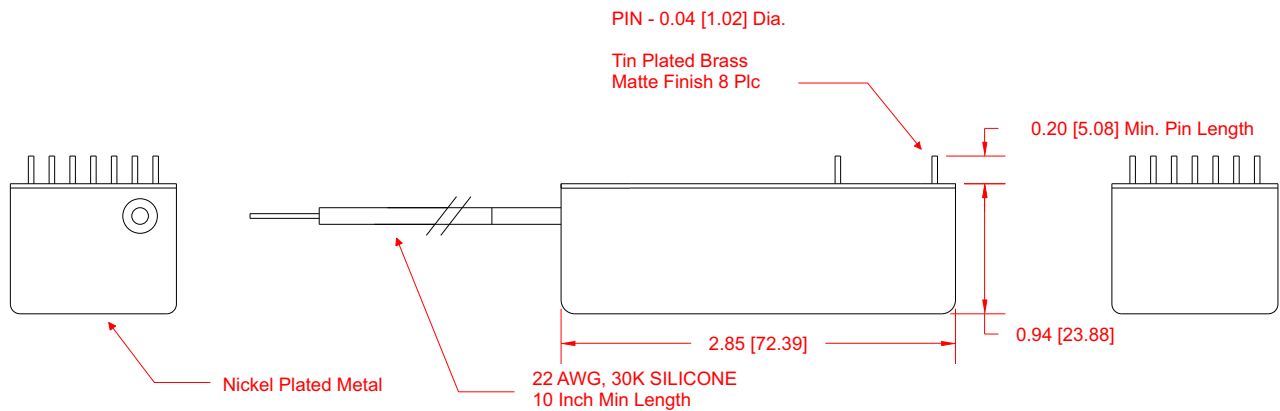
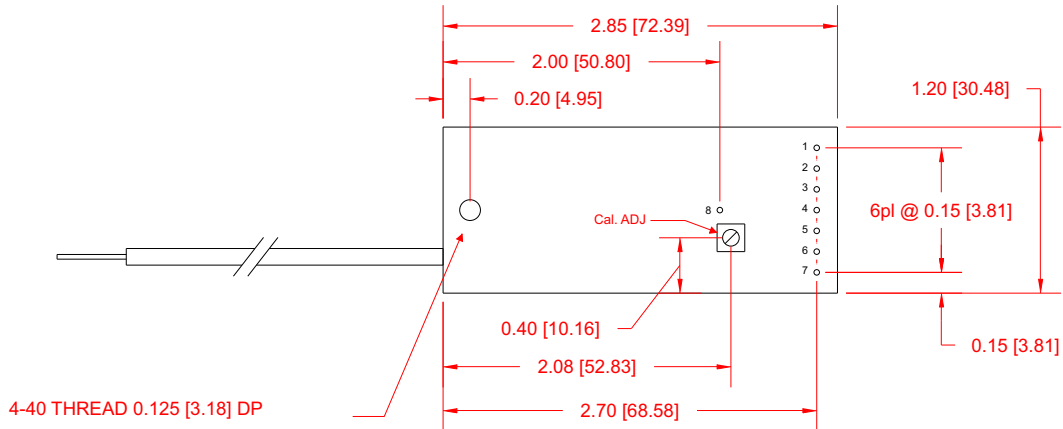
## PHYSICAL SPECIFICATIONS

Dimensions .....	1.2 x 2.85 x 0.94 inches	Encapsulation Material .....	UL 94V-0 Epoxy
Weight .....	4.3 Oz	Case Material .....	Nickle Plated Metal
			<i>(With Non-conductive Base Plate)</i>



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PIN #	FUNCTION
1	+ Input
2	Reference Voltage
3	Control / Programming Voltage
4	Case / Gnd
5	- Input
6	Output Current Monitor
7	Output Voltage Monitor
8	HV Return

*Dimensions are in Inches  
[Metric equivalents in brackets]*



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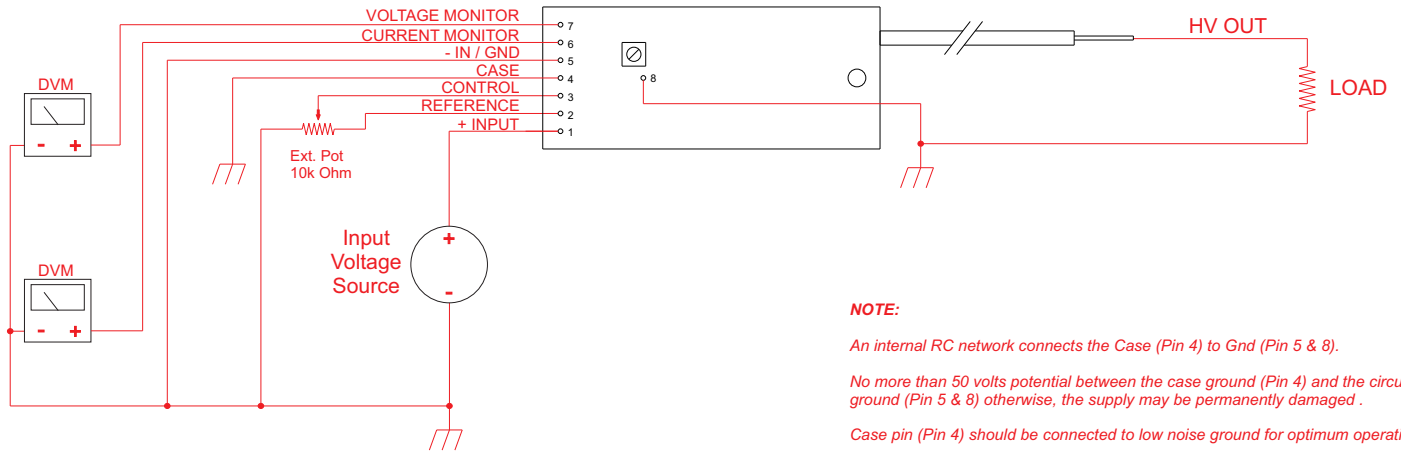
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## APPLICATION NOTES

### EXTERNAL / REMOTE POTENTIOMETER

The output voltage of the SP7250 can be controlled with an external or remote potentiometer .

Figures below shows the typical connections needed.



**NOTE:**

An internal RC network connects the Case (Pin 4) to Gnd (Pin 5 & 8).

No more than 50 volts potential between the case ground (Pin 4) and the circuit ground (Pin 5 & 8) otherwise, the supply may be permanently damaged .

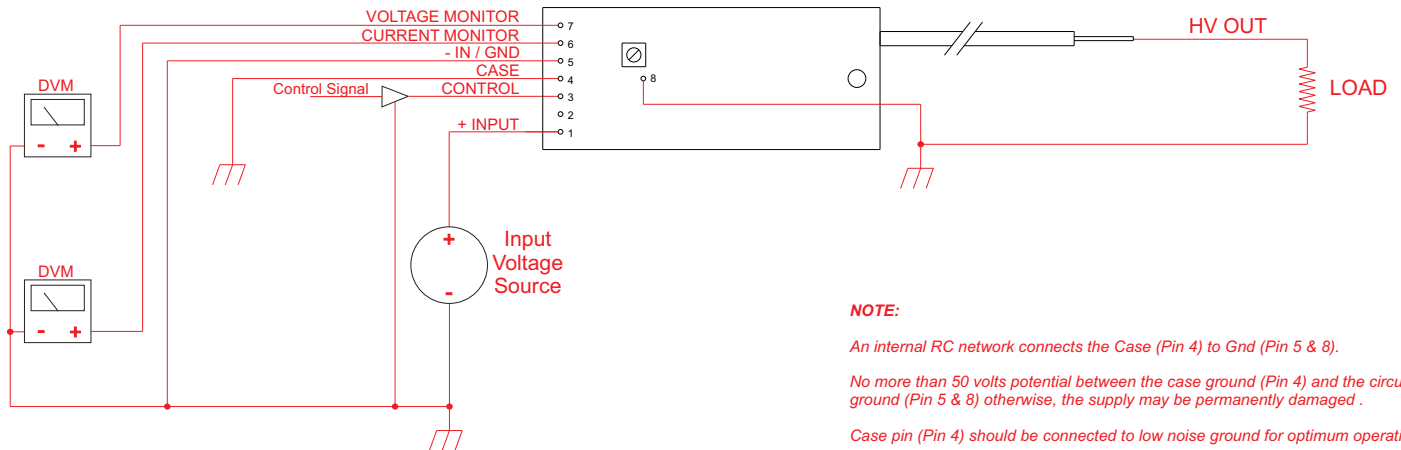
Case pin (Pin 4) should be connected to low noise ground for optimum operation.

-IN (Pin 5) & HV Return (Pin 8) are internally connected.

### EXTERNAL / REMOTE VOLTAGE SOURCE

The output voltage of the SP7250 can be controlled with an external or remote voltage source .

Figures below shows the typical connections needed.



**NOTE:**

An internal RC network connects the Case (Pin 4) to Gnd (Pin 5 & 8).

No more than 50 volts potential between the case ground (Pin 4) and the circuit ground (Pin 5 & 8) otherwise, the supply may be permanently damaged .

Case pin (Pin 4) should be connected to low noise ground for optimum operation.

-IN (Pin 5) & HV Return (Pin 8) are internally connected.



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### APPLICATION NOTES

#### CLEANING AGENTS

In order to avoid possible damage, any penetration of cleaning fluids must be prevented, since the power supplies are not hermetically sealed.

#### NUCLEAR AND MEDICAL APPLICATIONS

American Power Design products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of American Power Design, Inc.

#### SAFETY REQUIREMENTS

The converters are designed to meet North American and International safety regulatory requirements per UL 60950-1/CSA 22.2 No. 60950-1-07 Second Edition, IEC 60950-1:2005, and EN 60950-1:2006. Basic Insulation is provided between input and output. To comply with safety agencies requirements, an input line fuse (1A SB) must be used external to the converter.

If one input fuse is used for a group of modules, the maximum fuse rating should not exceed 20A.

#### WARRANTY

All products manufactured by American Power Design, Inc. (APD) are warranted to be free of defects due to material or workmanship for a period of one year from date of shipment. At our option, APD will repair or replace any non-conforming product.

APD expressly disclaims any liability for consequential or incidental damages resulting from the use or misuse of its products by the purchaser or others.

This warranty is in lieu of all warranties expressed or implied, including the warranties of merchantability. No other warranties, obligations, or liabilities are expressed or implied.

All products being returned for repair require a return material authorization(RMA) assigned by APD prior to return shipment.