



Model PMT2000

LOW NOISE HIGH VOLTAGE POWER SUPPLY

FEATURES

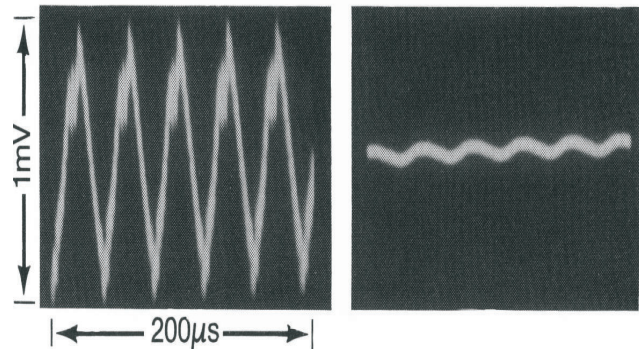
- Quiet Less than 100 $\mu\text{Vp-p}$ Noise
- Stable 100ppm Stability
- Accurate 3 and Half-digit Digital Meter
Monitoring the Output
- Convenient Self-contained; Required 115VAC
- Filtered Built-in EMI/RFI Line Filter
Eliminates Power Line Noise

The PMT-2000 is targeted for critical applications where the noise level is considered to be of prime importance, such as: Biasing Photomultiplier tubes, electron multipliers or other types of detectors that depend on clean high voltage bias.

Figure 1 illustrates biasing examples where the noise level of the H.V. supply is of the utmost importance, since it appears at the input of the preamplifier.

Figure 2 shows a circuit where the H.V. noise level is of little significance since the ripple is greatly attenuated by the R3, R1 voltage divider.

An oscilloscope trace shows the ripple of one of the quietest H.V. supplies on left, compared to the PMT-2000 on the right under identical conditions (2kV/1mA). Note the lack of H.F. component of the ripple on the right.



SPECIFICATIONS

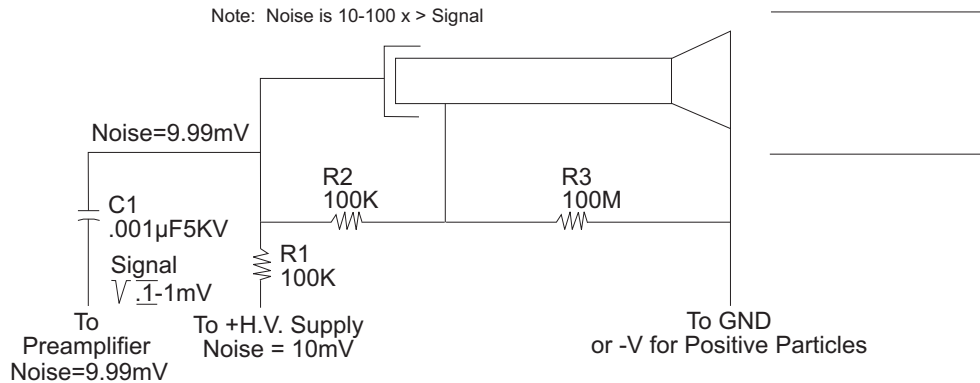
Output Voltage/Model	2kV	3kV	5kV	7.5kV
Output Noise	100 $\mu\text{Vp-p}$	100 $\mu\text{Vp-p}$	300 $\mu\text{Vp-p}$	500 $\mu\text{Vp-p}$
Output Current	2mA	1mA	0.5mA	0.25mA

ALL MODELS:

Output Polarity	Positive or Negative (Must be specified when ordering)
Output Connector	SHV Type
Line Regulation	.0001% per 10% Line Change
Load Regulation	.007% per 10% Load Change
Temperature Stability	100ppm/ $^{\circ}\text{C}$ (0-49 $^{\circ}\text{C}$)
Power Requirements	115VAC/0.250A or 220VAC/0.125A
Physical Size	12"W x 3.8"H x 11" D

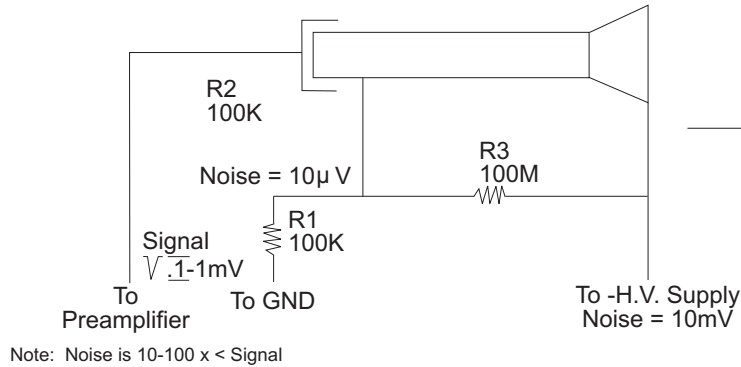
Option 1 Remote Control Voltage Programming (P/N RVP9)

Figure 1



When using a positive H.V. supply, the noise from the supply enters the preamplifier via R1 and C1 with almost the same amplitude as at the power supply. Note that we are trying to detect pulses of an amplitude between .1 and 1mV in the presence of almost 10mV noise. This application demands a clean H.V. supply.

Figure 2



A negative H.V. supply biasing scheme shows the 10mV noise at the electron multipliers entrance has a negligible effect on the gain. The preamplifier in this configuration is at virtual ground potential. The residual noise reaching the preamplifier is only 17µV, well below the detection ability of the system. In this application the noise is of lesser importance than in Figure 1.



Phone (303) 463-5500 Fax (303) 463-5505
 Email aricorp@aricorp.com
 Home Page <http://www.aricorp.com>
 11950 Spruce Canyon Circle, PO Box 7427, Golden CO 80403, USA