Model 2007/2007P
Photomultiplier Tube Base/ Preamplifier

Description
The CANBERRA Models 2007 and 2007P are compact PM tube bases containing a high-voltage divider network to supply all necessary bias voltages for most common 10-stage PM tubes. A focus control provides for optimization of detector resolution and a gain control permits trimming the HV bias when several tubes must be matched for array setups.

Designed for compatibility with the CANBERRA Model 802 Series scintillation detectors, or equivalent, the tube base connects directly to the PMT, providing one integrally mounted assembly.

The Model 2007 includes high-voltage blocking capacitors to couple the anode and dynode signal outputs to a preamplifier, such as the CANBERRA Model 2005, or to a constant fraction discriminator, such as the CANBERRA Model 2129.

The Model 2007P includes a preamplifier which integrates the charge impulse from the anode of the PM tube to a pulse-shaping main amplifier, such as the CANBERRA Model 2025 or 2026. The preamp features high-voltage transient protection, noise contribution less than 0.1 fC rms, and a rise time of less than 20 ns.

Specifications
MODEL 2007

INPUTS
- HV – Accommodates PM tube bias up to +2 kV dc, maximum.
- DETECTOR SIGNAL – Internally ac coupled to the anode (pin 11) and last dynode (pin 10).

OUTPUTS
- ANODE – Optional 50 Ω output resistance, shunt connected; ac coupled.
- DYNODE – Optional 50 Ω output resistance, shunt connected; ac coupled.

CONTROLS
- GAIN AND FOCUS – Screwdriver adjustable controls.

PERFORMANCE
- DIVIDER BIAS – Total resistance 7.2 MΩ, nominal; 10 dynodes at 75 V per kV dc of detector bias.
- FOCUS RANGE – +72 V to +145 V per kV dc of detector bias.
- GAIN RANGE – Varies total PM tube bias between 92% and 100% of applied high voltage.
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CONNECTORS
- ANODE and DYNOE – BNC.
- HV – SHV.
- PM TUBE SOCKET – Cinch Jones 3M-14.

PHYSICAL
- SIZE – 7.6 x 5.8 cm (3 x 2.3 in.) (L x D).
- NET WEIGHT – 0.14 kg (0.3 lb).
- SHIPPING WEIGHT – 1.1 kg (2.3 lb).

ENVIRONMENTAL
- OPERATING TEMPERATURE – 0 to 50 °C.
- OPERATING HUMIDITY – 0 to 80% relative, non-condensing.
- Meets the environmental conditions specified by EN 61010, Installation Category I, Pollution Degree 2.

CONNECTORS
- POWER – Amphenol 17 series.
- OUTPUT and TEST – BNC.
- HV – SHV.
- PM TUBE SOCKET – Cinch Jones 3M-14.

POWER REQUIREMENTS
- PREAMP – ±12 V dc at 15 mA.
- HV – 0-2 kV dc at 0-300 µA.

PHYSICAL
- SIZE – 7.6 x 5.8 cm (3 x 2.3 in.) (L x D).
- NET WEIGHT – 0.14 kg (0.3 lb).
- SHIPPING WEIGHT – 1.2 kg (2.7 lb).

ENVIRONMENTAL
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CONNECTORS
- ANODE and DYNODE – BNC.
- HV – SHV.
- PM TUBE SOCKET – Cinch Jones 3M-14.

FOCUS RANGE – 72 V to +145 V per kV dc of detector bias.
GAIN RANGE – Varies total PMT bias between 92% and 100% of applied high voltage.

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- OUTPUT and TEST – BNC.
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