

**PRE-AMPLIFIER**

TYPE : PA 311

**Technical Data**

**Pre-amplifier PA311** manufactured by NUCLEONIX essentially has a standard 14 contact socket, 10-stage voltage divider, pre-amplifier electronics. The Preamplifier is designed to suit a wide range of Standard detectors (Scintillation), integral assemblies. NUCLEONIX offers integral assemblies with the above Preamplifier. This Preamplifier is directly compatible with all 2, 3 and 5 inch diameter PM tubes used in standard detectors.

**FEATURES :**

- Compact Solid state circuit design.
- Suitable for wide range of NaI integral assemblies.
- Choice of both focus and gain adjustments by presets.
- Rise time 100 nano sec.
- Pre-amplifier with vertical housing for integral assembly.

**SPECIFICATIONS**

**Socket :** Standard 14 contact pin

**Voltage Divider :** 10 stage, directly compatible with all 2, 3 and 5 inch diameter PM tubes used in standard Bicron detectors.

**Connectors :**

- (a) Signal Output: Positive polarity, BNC receptacle, mates with BNC plug or equivalent.
- (b) EHT Connector: Standard MHV / UHF socket, which can mate with a MHV/UHF plug.
- (c) DC Pre-amp Power : 5 pin minihex / circular I/O connector (socket).

**Noise:** Less than 50µ volts rms referred to input.

**Input:** Direct connection from photomultiplier tube anode to charge integrating pre-amplifier input circuit, negative charge.

**Conversion Gain:** 5x10<sup>-11</sup> Coulombs per volt with NaI (TI) or faster scintillators.

**Rise Time :** 100 Nano Seconds

**Decay Time :** 4µ seconds (internally adjustable)

**Output impedance :** 90 ohms (approx)

**Gain stability :** 0.25% C from 0° C to 50° C.

**Linearity :** 0.25%

**Power requirement :**

- a. Pre-amp -12V at 10mA
- b. PM Tube voltage Divider Bias: Typically +600V to +850V (positive only) at 150 µA.

