



Innovator In Spectroscopy Equipment

QUAD DC AMPLIFIER MODEL QA2314



NUCLEAR INSTRUMENTS MODULE



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Features:

- Noise: $< 50\mu\text{V}$ rms, referred to the input
- Normal Gain: $4.0 \pm 5\%$ (each section)
- Nonlinearity: $< \pm 2\%$ for V output to $\pm 1\text{V}$
- Instability: $< \pm 100\mu\text{V}/^\circ\text{C}$ referred to the output
- Overload recovery: $< 4\text{ns}$ for a X20 overload
- Band width: dc to 300MHz, noninverting
- Propagation delay: 2ns per section typical

Description:

The model QA2314 contains four independent amplifiers. Each amplifier has a wide bandwidth, short rise and fall times with very small overshoot, and a large output swing. This module is particularly suited for "single photon" counting applications. The 2314 output signal range is compatible with the threshold range of all EG&G discriminator modules and with other M100 Nuclear Instrumentation System Modules that accept fast negative signals.

The degenerative feedback used in each amplifier section provides excellent linearity and gain stability. AC-coupling between amplifier stages allows high gain without amplification of input offset.

Specifications:

- **Inputs:**
 - Dc- coupled, front panel BNC connector per section, bipolar
 - Impedance: 50 ohm
 - Linear Range: $\pm 220\text{m}$
 - Reflections: $< 5\%$ from $\pm 10\text{V}$ transient with 1 nSec rise times
 - Protection: $\pm 10\text{V}$, $\pm 50\text{V}$ transient
 - Offset: $< \pm 50\mu\text{V}$
- **Outputs:**
 - Dc- coupled, front panel BNC connector per section, bipolar
 - Linear Range: $\pm 1\text{V}$ on 50 ohm
 - Rise and Fall Times: Typ. 1.2 nSec
 - Overshoot: $< 3\%$ for 1ns rise time input signal
 - Offset: adjustable to $\pm 100\mu\text{V}$ on 50 ohm
- **Controls (Front Panel):**
 - DC-Ball: one 22-turn front panel potentiometer per section, adjusts the output offset within the range of $\pm 100\mu\text{V}$ on 50 ohm
- **Performance:**
 - Operating temperature range: 0 to 50°C





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Electrical and Mechanical Power Required:

• Typical Power Requirements

- Standard version +12V, 165mA; -12V, 165mA; +24V, 85mA; -24V, 88mA

• Physical

- Size: NIM-standard single-width module 3.43 X 22.13 cm (1.35 X 8.714 in.) per DOE/ER-0457T
- Weight: Net Weight: 0.9 kg (2.0 lbs) & Shipping WEIGHT: 2.2 kg (4.9 lbs)

• QA 2314 REV 1.0 140415



