Innovator In Spectroscopy Equipment

DELAY LINE AMPLIFIER
MODEL DLA2031

NUCLEAR INSTRUMENTS MODULE

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Features:

- Delay-line shaping for energy and time spectroscopy
- Ideal for n–gamma discrimination by
- Excellent high-counting rate performance
- Optimum timing capabilities
- Selectable integration time constants

Description:

The CFP Model DLA2012 Delay Line Shaping Amplifier is intended for energy and time spectroscopy with scintillation detectors. It can also be used with proportional counters, semi-conductor detectors, and position-sensitive proportional counters. Its delay-line shaped output signal is particularly well suited for high-counting rate and timing applications. This particular type of output signal offers a more rapid baseline recovery than is possible with semi- Gaussian shaping amplifiers. The Model DLA2012 provides excellent timing capabilities, either for leading-edge or zero-crossing timing techniques, particularly when it is used with an CFP Model 2013 Pulse- Shape Analyzer OR 2038 Timing Single-Channel Analyzer. Double-delay-line shaping exhibits less timing jitter when compared with either the classical RC-shaping network or active-filter networks, primarily due to the fast rise time and fall time of the double-delay-line shaped output pulse.

Specifications:

- **Gain Range:** 7-position Coarse Gain selection from 10 through 1000 and single turn Fine Gain control from 0.3 through 1; total gain is the product of Coarse and Fine Gain settings.
- **Shaping Filter:** Front-panel switch permits selection of integration time constant with ô = 0.04, 0.1, or 0.25µs (40, 100, or 250 ns).
- **Integral Nonlinearity:** ⩽±0.05%.
  Noise ⩽20µVrms referred to input using 0.25µs Integrate and maximum Gain of 1000; ⩽25µV for Gain = 50; ⩽60µV for Gain = 10.
- **Crossover Walk:** For constant gain, walk <±1 ns for 20:1 dynamic range; <±2 ns for 50:1; <±2.5 ns for 100:1. Crossover shifts <±4 ns for any adjacent Coarse Gain switch settings.
- **Count Rate Stability:** A pulser peak at 85% of analyzer range shifts <0.2% in the presence of 0 to 105 random counts/s from a 137Cs source with its peak stored at 75% of the analyzer range.
- **Temperature Instability Gain:** d±0.01%/°C, 0 to 50°C.
- **DC Level:** ⩽±0.1 mV/°C, 0 to 50°C.


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