

N968

Spectroscopy Amplifier



Features



- Gain Range continuously variable from 1 to 3000
- Integral non-linearity $< \pm 0.025\%$ for 2 μs shaping time
- Unipolar output noise $< 4.0 \mu\text{V rms}$ for gain=100 and $< 3.5 \mu\text{V rms}$ for gain=1000 (@ 3 μs shaping time)
- Bipolar zero cross-over walk $< \pm 3 \text{ ns}$ (@ 50:1 dynamic range, 2 μs shaping time)
- LED indicator for high precision pole-zero cancellation without using oscilloscope
- Active filter networks with wide range of shaping times
- Gated baseline restorer with automatic controls of threshold and restoring rate
- Pile-up rejector and live-time corrector

Description

The CAEN **Mod.N968** is a **spectroscopy amplifier** implemented in a one unit wide NIM module. It accepts the typical outputs generated from either optical feedback or resistor feedback preamplifiers connected with nuclear particle detectors. The output is Quasi-Gaussian with **0 to +10 V** output dynamics.

BNC connector

1-unit wide NIM unit, BNC type coaxial connector (Mod. N968)

Consult our **connectors reference page** for technical information.

A front panel switch allows to select between positive and negative input signals. Gain setting can be performed continuously in the **10 ÷ 1500** range, product of Coarse, Fine and Superfine Gain. Two internal jumpers allow to set a **x 0.1** attenuation and a further **x 2** amplification, thus extending the gain range to **1 ÷ 3000**. The shaping time values are **0.5, 1, 2, 3, 6, 10 μs** .

The Pole Zero cancellation is performed via a front panel screw-trimmer. The module features also a Bipolar output (to be used for timing purposes), an advanced Gated Baseline Restorer circuit (with manual or automatic threshold setting) and a Pile Up Rejector which allows to reject piled up events.

Technical Specifications

Packaging

1-unit wide NIM unit

Gain range

1 ÷ 3000

Pulse shape

- UNipolar shape: quasi Gaussian, peaking time $2.4 T_s$ pulse width at 0.1% level equal to 2.9 times the peak ing time
- Bipolar shape: approximate derivative, time to crossover $3 T_s$

Integral non linearity

$< \pm 0.025\%$ from $2 \mu s$ shaping time (*Measured from 20% to 90% of Full Scale Range*)

Temperature instability(0 to 50°C)

- Gain: $< \pm 50$ ppm/°C
- DC level: UNipolar output: $< \pm 10 \mu V/^\circ C$
- Bipolar output: $< \pm 30 \mu V/^\circ C$

Bipolar crossover walk

$< \pm 3$ ns at $2 \mu s T_s$ for 50:1 dynamic range

Overload recovery

Recovers to within 2% of rated output from X300 overload in 2.5 nonoverloaded pulse widths using a gain of 1000 for UNipolar Output. Same recovery from X1000 overload for Bipolar

Spectrum broadening

Typical: $< 16\%$ FWHM for a ^{60}Co 1.33 MeV gamma line at 85% of full scale for an incoming count rate of 10^3 to 10^5 counts/s (Unipolar Output, 2- μs shaping)

Spectrum shift

Peak position typical shift: $< 0.024\%$ for a ^{60}Co 1.33 MeV gamma line at 85% of full scale measured from 10^3 to 10^5 counts/s (Unipolar Output, 2- μs shaping) (T.B.C)

Equivalent Noise

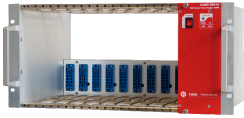
- $4 \mu V / 6 \mu V$ (RMS) for UNipolar/Bipolar output for $3 \mu s$ shaping time and coarse gain = 100
- $3.5 \mu V / 5 \mu V$ (RMS) for UNipolar/Bipolar output for $3 \mu s$ shaping time and coarse gain = 1000

Ordering Options

Code	Description
WN968XAAAAAA	N968 - Spectroscopy Amplifier RoHS

Related Products

NIM8302



5U 10 slot 150 W Compact Crate

N957



8k Multi-Channel Analyzer

NIM8304



7U 12 slot smart fan unit Switching 2000 W Crate

NIM8302P



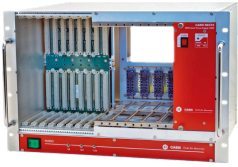
5U 5 slot 150 W Portable Crate

NIM8305



2 Slot Switching 450 W Mini Crate

NV8020A



7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

NIM8303



5U 12 slot 300/600 W Crate

NIM8306



2 Slot Switching 750 W Mini Crate



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