

NCB215P - SPECTROMETRIC AMPLIFIER

The NIM module NCB215P is a precise spectrometric amplifier for energy spectroscopy with all types of detectors. The module has unipolar output, low noise, wide-gain range and front-panel selectable time constant.

The Module NCB215P has active filter networks of circuit that generate a very symmetrical unipolar output with optimal signal-to-noise ratio over a wide range of time constants. The module NCB215P has a good DC output stability. The Gain is adjustable from 10 to 3000 using a

front-panel screwdriver potentiometer (FG) and Gain Switch (GAIN). The output full scale linear range of 0 to +10 Volt (without termination). BLZ front-panel potentiometer used to adjust pole-zero cancellation for decay time constants from 25 μ s to ∞ . There is additional screwdriver potentiometer on the front panel output offset regulator.

PERFORMANCE

Gain range	Continuously adjustable from 10 to 3000
Pulse shape	Semi-Gaussian on all ranges
Integral nonlinearity	$<\pm 0,025\%$
Noise	$< 8\mu\text{V}$ (measured with 3 μ s shaping time)
Temperature instability	Gain $\leq \pm 0,01\%/^{\circ}\text{C}$ (0 to 50 $^{\circ}\text{C}$) DC Level $\leq \pm 30 \mu\text{V}/^{\circ}\text{C}$ (0 to 50 $^{\circ}\text{C}$)
Spectrum broadening	Typically $<16\%$ FWHM
Spectrum shift	Peak position shifts typically $<0,03\%$

FRONT PANEL CONTROLS

Fine Gain	10-turn precision potentiometer variable gain factor of x0,5 to x3
Coarse Gain	6-position switch selects feedback resistors for gain factors of 20, 50, 100, 200, 500, and 1k.
Input polarity	Locking toggle switch selects either POS or NEG input pulse polarity
Shaping time	6-position switch selects time constants from 0.5, 1, 2, 3, 6 and 10 μ s
Pole zero ADJ (PLR)	Front-panel screwdriver adjustment to compensate for the preamplifier decay time constant from 25 μ s to ∞

INPUT/OUTPUT

Input	Front-panel BNC connector accepts positive or negative pulses with rise time of 15 to 1000 ns and decay time of 30 μ s to ∞ , Zin 1 K Ω dc-coupled; maximum \pm 10V; absolute maximum \pm 12V.
Outputs	UNIPOLAR Front-panel BNC connector with Zo= 100 Ω , short-circuit proof; prompt with full scale linear range of 0 to +10V (without termination); active filter shaped; DC-restored; DC-level adjustable to \pm 20 mV.
Outputs Zero ADJ (Vos)	Front-panel screwdriver adjustment to compensate output offset in range \pm 20mV. Adjustment is regulated automatic base line restorer threshold (BLZ)
Preamp power	Rear-panel standard D9 power connector

POWER SUPPLY REQUIREMENTS

The module has NIM standard power supply.

P. Voltage (V)	Current/ch (mA)
+12	90
-12	90

DIMENSIONS

dimensions	3,43x22,13 cm per DOE/ER-0457T
weight	1 kg

