

# BNC Model PB-5, Programmable Precision Pulse Generator, Sliding Pulser

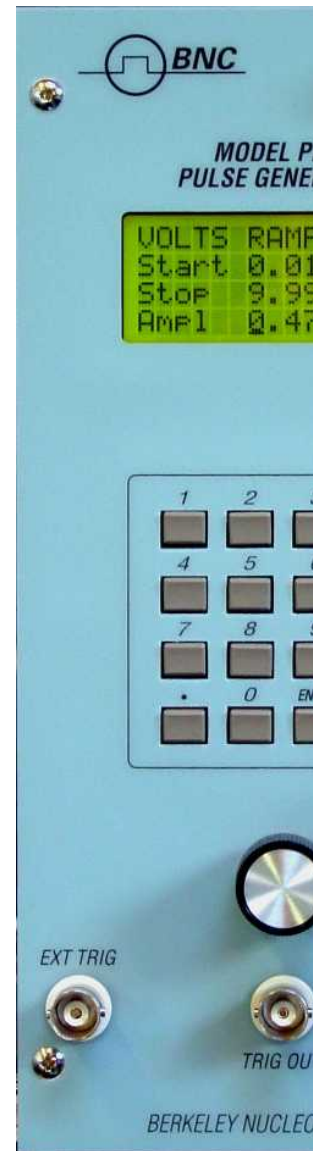
## FEATURES

- Count Rate 2 Hz - 500 kHz
- Full digital Controllability
- Built-in Ramp Generator
- Rise Time 50 ns - 10 ms
- Decay Time Constant 0.5 ms - 1000 ms
- Output Voltage Range 0 - 10 V, 0 - 5 V into 50 ohms
- Flat-top or Tail Pulse
- Output Polarity Positive or Negative
- Integral non-linearity: +/- 15 ppm
- Temperature Stability: +/- 5 ppm / °C

## DESCRIPTION

The PB-5 sets a new standard for precision pulse generators. It offers full digital controllability with a built-in ramp generator for linearity Testing. It provides tail and flat top pulses with outstanding integral linearity and extremely low amplitude change with temperature. The PB-5 is capable of testing the stability, linearity and resolution of the most demanding spectroscopy circuits and instrumentation. It is the successor to the industry standard, PB-4, and to the [9010](#).

The 4x16 LCD display, keypad, and a spinner knob provide a user interface that is easy to use. RS232 interface is also standard along with memory that will store and recall nine complete pulse setups.



The Model PB-5 provides unprecedented performance in a precision pulse generator. It includes a full-featured, high resolution, linearity and stability. The pulse repetition rates, which are variable over a broad range, go up to 0.5 MHz required when testing for MCA and PHA linearity because of the high number of data points required for a statistic

The built-in ramp generator allows you to control ramp duration, the number of ramps and the ramp limits. Now you can test your system or just a portion of that range. This ramp generator and precision pulse generator combination allows for demanding applications. The new user interface is intuitive and easy-to-use. Parameters can be selected and changed using the keypad pushbuttons. Example of parameters displayed are shown below.

### Ramp Settings

Start  
Stop  
Ramp Time

# of Cycles  
V/KeV

### Pulse Settings

Amplitude  
Rate  
Width  
Delay  
Clamp

Risetime  
Falltime  
Polarity  
Attenuation

### Trigger Settings

External Trigger  
External Gate  
Internal Clock

## SPECIFICATIONS

### INPUTS and OUTPUTS

#### External Trigger:

0 to 500 kHz, +100 mV to +10 V.  
Threshold adjustable +3.5 V in 0.1 V steps.

#### Amplitude:

0.0 to 10.0 V (0 to 5 V into 50 ohms)

### SETTINGS

#### Attenuation:

0, 2, 5, 10, 20, 50, 100, 200, 500, 1000

#### Rep Rate:

2 Hz to 500 kHz

Scaleable in energy units (keV)  
Resolution 155  $\mu$ V

**Trigger Out:**

+5 V unterminated; +2.2 V into 50 ohms,  
width 200ns.

**GENERAL**

**Amplitude Characteristics:**

Jitter: +/- 10 ppm  
Integral non-linearity: +/- 15 ppm  
Temperature stability: +/- 5 ppm/ $^{\circ}$ C from 20 $^{\circ}$ C to 45 $^{\circ}$ C.

**Power Requirements:**

+24 V at 170 mA,  
-24 V at 150 mA,  
+12 V at 450mA,  
-12 V at 5 mA

**PHYSICAL**

**Size:**

Triple-width AEC NIM module 4.05" wide x 8,70" high in  
accordance with TID-20893 (Rev. 3).

**Weight:**

3.5 lbs. net; 6lbs. Shipping.

**Rise Time (10-90%):**

50 ns to 10 ms, in 8 steps.

**Decay Time Constant (100-37%):**

0.5 to 1.0 ms in 11 steps.

**Pulse Type:**

Flat-top or Tail Pulse  
In flat-top mode, both rise time and decay time are  
adjustable. In tail pulse mode, rise time is a fixed 50 ns,  
decay time is adjustable.

**Polarity:**

Positive or Negative.

**Width:**

100 ns to 10 ms

**Delay:**

250 ns to 10 ms

**Modes:**

Single pulse via a front panel pushbutton  
Internal Rep Rate  
External Trigger  
External Gate (same pulse requirements as Ext Trig)  
Clamped baseline option to bring the baseline to zero  
prior to the next pulse

**Internal Ramp:**

adjustable start and stop points;  
adjustable ramp period 90-900 s;  
selectable number of ramp cycles;  
ramp in keV or volts

**Stored Settings:**

Up to 9 parameter configurations with recall, stores  
parameters in use at shutdown for automatic recall  
when powered on

**Remote:**

RS232 at 9600 baud

[Overview Nuclear Pulse-Generators](#)

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