# BIPHASIC STIMULUS ISOLATOR
# (Square Wave)

Model BSI-2A




- TWO INDEPENDENT CONSTANT CURRENT SOURCES:
  Use Separately or Biphasically
- ACCEPTS TTL OR BIPHASIC GATES
- MULTI-RANGE 70-TURN AMPLITUDE CONTROLS
- PLUS & MINUS 90 VOLTS COMPLIANCE
- BATTERY OPERATED PHOTICALLY ISOLATED

**Description:**

The Model BSI-2A Biphasic Stimulus Isolator has been optimized for applications requiring precise control of rectangular waveform stimuli. It is designed for use with external timing circuits which are biphasic single channel (e.g. BAK BPG-l ,2) or dual channel TTL (BAK DC-1 Digital Controller or other monophasic pulse signal sources such as computers). The external timing input(s) gates each of the two isolated, independently battery powered, constant current sources. Because they have completely independent isolators, range controls, and output circuits, the" A" and" B" outputs can be used as independent monophasic stimuli which are isolated from each other as well as from thecontrol input. Each output has an inversion switch and an extra binding post to facilitate installation of coupling capacitors or current monitoring resistors. The two sets of output binding posts are strategically placed so that the addition of two jumpers converts the unit instantly to biphasic or pulse pair operation.

The Model BSI-2A features high compliance, high isolation, and the same conveniently portable plastic case as the BSI- 1A. The main difference is that its output circuitry has been optimized for gated on-off operation rather than proportional input following. This mode of operation is inherently very low noise and eliminates the danger of applying DC currents as a result of low level offsets in the control signal between output pulses. It also permits manual fine tuning of the output level from the unit itself which can be placed near the preparation. If you need non-rectangular waveforms (e.g. sinusoids, ramps or computer D/A driving), we recommend the BSI- 1A, a linear biphasic stimulus isolator with a complete range of both constant current and constant voltage output levels.

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**Specifications:**

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| Constant Current | 100 nA to 10 mA each channel with polarity inversion switch |
| Current Control Ranges | 1,10, l00 and 1000uA.per turn via 5 position rotary switches each channel |
| Output Controls | 10 turn potentiometer with indicating dial each channel |
| Output Linearity | 1 % all ranges |
| Compliance Voltage | 90 volts each channel, independent battery sources |
| Isolation | 1000 VDC isolated, <30pF between any two jacks |
| Output Connections | 3-way banana binding posts, 3 each channel |
| Input Connections | Floating BNC jacks |
| Input Signal: A/B Biphasic | +/- 2.8 V mm., TTL compatible, protected to +/-15V |
| Input Signal: B Only | +/- 2.8 V mm., TTL compatible, protected to +/-15V |
| Power Supply | 2: 9V Alkaline batteries |
| Battery Life | 50 hours minimum |
| Package | Bench mount with supporting handle |
| Size | 3.5"h x 8.6"w x 7.5"d (less handle) |
| Weight | 3 lbs. (shipped with batteries installed) |

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**Other BAK equipment used with BSI-2:**

BPG- 1,2 Biphasic Pulse Generators
DC-1 Digital Controller
MDA-1 ,4 Differential Amplifiers with Stimulus Gating
A-1 Single Ended Extracellular Microelectrode Amplifier

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