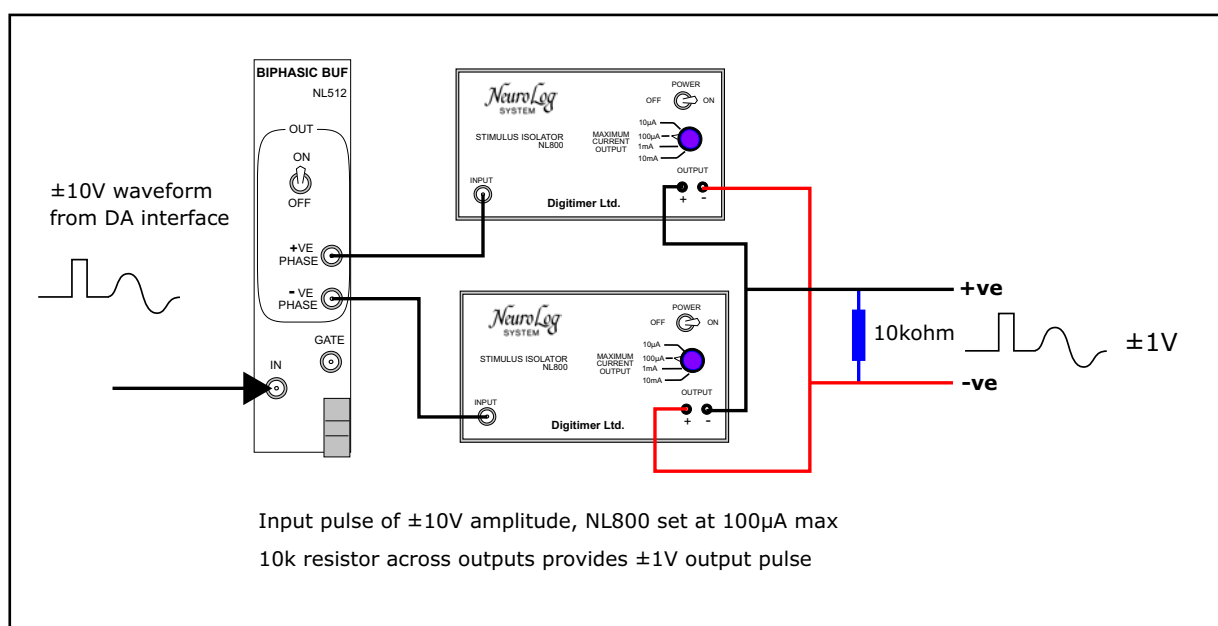


Using a Biphasic Analogue Waveform to Generate an Isolated Biphasic Voltage Output from two NL800 Constant Current Stimulus Isolators



Overview

The **NL800 STIMULUS ISOLATOR** provides a compact constant current source for electrical stimulation. When two NL800's are used in combination with an **NL512 BIPHASIC BUFFER**, an analogue voltage waveform can be converted to a constant current output, making it possible for the NeuroLog System to become a computer-controlled, isolated, constant current stimulator. However, in some applications, users may prefer to use an isolated constant voltage power source. In these cases, a resistor of known value can be soldered across the outputs of the NL800's. In the example illustrated, a 10kohm resistor is used to ensure that the $\pm 10\text{V}$ input pulse results in a $\pm 1\text{V}$ output pulse. By applying Ohm's Law ($V=IR$), the $\pm 10\text{V}$ input pulse will cause the two NL800's to output a $\pm 100\mu\text{A}$ current (**I**). Insertion of the 10kohm (**R**) resistor means that the output voltage (**V**) is constrained to $\pm 1\text{V}$. The value of the resistor used can be altered to control the maximum amplitude of the final output voltage (within the compliance limits of the NL800 batteries).