

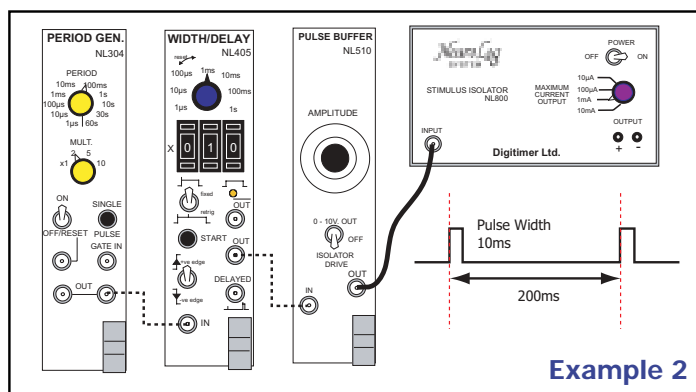
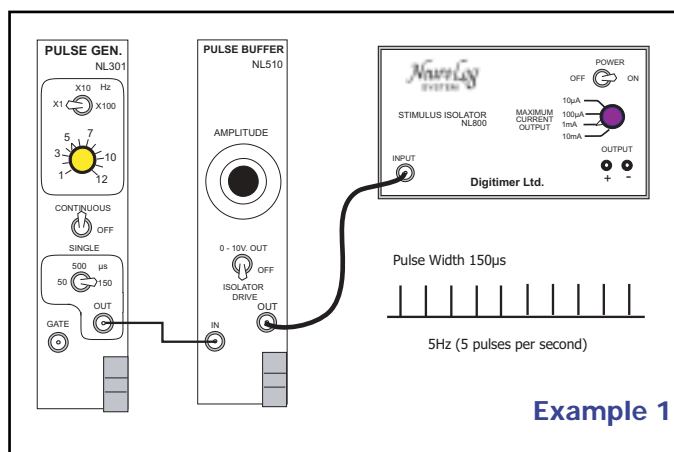
Some Examples of Simple Stimulator Circuits

Overview

The NeuroLog System includes the small battery powered constant current **NL800 STIMULUS ISOLATOR**, which can be driven by the **NL510 PULSE BUFFER** or **NL512 BIPHASIC BUFFER** modules. The three schemes below illustrate how easy it is to set up a simple timing and stimulation protocol using only a few NeuroLog modules.

EXAMPLE 1:

This arrangement provides single stimuli or continuous trains, with the pulse frequency continuously variable from $1s^{-1}$ to $1000s^{-1}$, three output pulse widths (50, 100, 150 μ s) and continuously variable output amplitude in four ranges from 0 to 10mA, with the stimulus output supplied by the NL800 isolator. Note that the NL510 can be used without the NL800 to generate a 0-10V non-isolated output for low voltage stimulation applications.



EXAMPLE 2:

By substituting the NL301 with the **NL304 PERIOD GENERATOR**, the pulse range can be greatly extended. Stimulus width can be adjusted by using the **NL405 WIDTH/DELAY**. Amplitude is controlled in the same manner as EXAMPLE 1.

EXAMPLE 3:

The **NL512 BIPHASIC BUFFER** can be used in combination with two NL800

modules to allow a biphasic analogue signal to be converted into a constant current stimulus. The resulting configuration is "current out for voltage in", meaning that the amplitude of the analogue input is proportional to the amplitude of the resulting constant current stimulus. Biphasic stimulation has the advantages that the preparation does not suffer the deleterious effects of "charging-up" and electrodes do not become oxidised. The biphasic analogue signal can be generated by a PC controlled DAC or by other NeuroLog System modules. If you want to stimulate several preparations using multiple sets of the NL512/NL800 configuration, the GATE input of the NL512 allows for digital output lines from a PC to enable each NL512 individually.

