
VOLTAGE MULTISTAGE

Congratulations on obtaining your *Verbos Electronics Voltage Multistage*. This Euro-Rack format module can be used to create control voltage functions including a triangle, square, pulse or saw LFO, a multi-staged envelope from 2 to 8 stages, and a sequence up to 8 stages long with selectable slides. The module can be thought of as a dual channel 8 stage sequencer and a voltage controlled clock with various means of control.

The Sequencer Section

Each of the 8 stages in the sequencer section occupying the left 2/3 of the module provides 2 sliders to control c.v.'s, a gate output, an LED to indicate stage activity and a 3 position toggle switch to select if the stage slides and has a high gate for the whole stage, is on with a gate for 1/3 of the stage length or is off.

The upper slider row is associated with the "c.v. a" output. This row relates to the toggle switch and its functions. When the switch is set to "off" the voltage at the "c.v. a" output will remain at that of the previous stage and when the switch is set to "slide" the voltage will linearly slide from the previous stage's voltage to the current stage at the rate set by the clock's "TIME" control. When the switch is set to "on" the voltage will immediately go to the setting of the slider.

The lower slider row is associated with the "c.v. b" output and always outputs the current stage's voltage to its output. This output is useful for patching into the "time c.v." input to individually set each stage's time.

The stage's gate output is high during the entire time the stage is selected.

The "analog" input and control allow the sequencer to reset or jump to a stage when the "strobe" input has a gate sent into it. The sequencer can be swept across its stages from a control voltage while the "strobe" function is latched. A short press of the "strobe" button will jump the sequence to the stage selected by the "analog" input and panel control. If the button is held for 2 seconds, "strobe" is latched holding the Voltage Multistage in analog address mode and freezing the clocking action. When clocking through sequences, any stage's gate output can be patched into the "strobe" input to create shorter sequences. When the patched stage becomes active, the sequencer will jump to the stage set by the analog input and control.

The "advance" button and gate input step the sequencer ahead 1 stage at a time. When this input is pulsed, the clock is reset providing a falling

ramp at the "ref." output and a gate for the first 1/3 of the ramp with its length controlled by the "Time" control. Stages set to "slide" will slide to their voltage setting at the rate of the ramp at the "ref." output. This allows voltage control of the slide time when clocking a sequencer from the "advance" input.

The Clock Section

The clock is a falling saw wave oscillator with control of start/stop. The length of the stages is controlled by the "TIME" control, getting longer as it is turned up. Control voltage can be added to or subtracted from the TIME setting by patching into the "time c.v." jack and setting the reversing attenuator associated with it.

The "ref." output provides a falling ramp for the length of the stage, often useful as an envelope when using the Voltage Multistage as a sequencer.

The "gate out" provides a gate for the stages set to "on" or "slide". The "slide" mode puts out a gate for the entire stage, the "on" mode puts out a gate for 1/3 of the stage time. The LED below the jack indicates its state. When "strobe" is latched, the "gate out" will always be high.

The "start" input and button start the clock and act as the gate input when in envelope modes. The "stop" input and button stop the clock.

When the "enable" input is high, the clock will only continue if there is a high gate on the "start" input. If the gate output from any stage is patched into the "enable" input a sequence or LFO can be created that only cycles when a key is held (patched into the "start" input).

When the "sustain" input is high, the clock will hold with a high gate on the "start" input. If the gate output from any stage is patched into the "sustain" input, that stage will become the sustain stage of a multi-staged envelope. It is recommended that, when creating an envelope, the gate from a keyboard be patched into the "start" and the "strobe" input, to be sure that the envelope restarts if it has not finished by the next key-press.