

AI Synthesis AI003 Looping ADSR: Manual

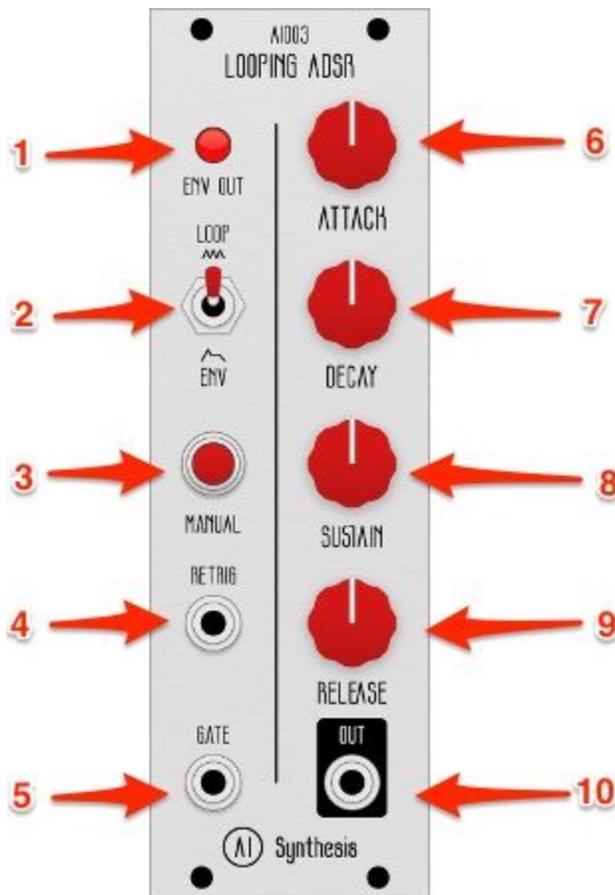
This is the Manual for the [AI003](http://aisynthesis.com/product/looping-adsr-envelope-generator-diy-kit/) Looping Envelope generator, you can purchase it by going to: <http://aisynthesis.com/product/looping-adsr-envelope-generator-diy-kit/>.

1. About the Looping ADSR

If you are new to DIY electronics, this is the third module you should build. The first module, the [AI001 Multiple](#) is ideal for beginners, as it teaches how to solder and signal flow. The [AI002 Mixer](#) familiarizes you with common electronic components, and is powered.

The AI003 is an idea third module as it is slightly more complicated than the mixer, but still much easier than most modules, and acts as a great bridge between beginner and intermediate builds. The Looping ADSR Envelope Generator DIY Kit is an ADSR Envelope Generator with the ability to also function as a variable wave LFO. This module can be used to feed control voltage to a filter or vca to modulate, for instance the volume of a sound source, or the cutoff of a filter.

2. Controls



1. Envelope Out. The brightness of this LED indicates the level of the output.

2. Loop / Envelope Toggle. This toggle selects the two modes of the Looping Envelope Generator, Loop or Envelope.

3. Manual Trigger. In Envelope mode, this button will manually activate an AD Trigger when either of the following are true: 1) There is no cable in the Gate input, or 2) There is a cable in the gate input, and a gate signal is present.

4. Trigger Input. In Envelope mode, when the trigger input voltage is high (from a clock, keyboard, or lfo for example) an AD Trigger will activate when either of the following are true: 1) There is no cable in the Gate input, or 2) There is a cable in the gate input, and a gate signal is present.

5. Gate Input. In Envelope mode, when the gate input voltage is high (from a clock, keyboard, or lfo for example) an ADSR Envelope will activate.

6. Attack. In Envelope and Loop mode, the position of this knob sets the Attack time, or the time it takes for the Output to go from 0 voltage at the start of an ADSR envelope, AD Trigger, or AD loop, to

maximum voltage. Times range from 20ms to 14 seconds.

7. Decay. In Envelope and Loop mode, the position of this knob sets the Decay time, or the time it takes for the Output to go from maximum voltage after the Attack Phase to either 0 Voltage of an AD Trigger, or to the Sustain Level of an ADSR Envelope or AD Trigger. Times range from 10ms to 20 seconds.

8. Sustain. In Envelope mode, the position of this knob sets the level of the Output voltage while gate is true (a key is held). In AD Trigger mode, the position of this knob sets the return voltage, and the knob must be set to zero in order to “reset.”

9. Release. In Envelope mode, the position of this knob sets the time it takes for the Output voltage to return to zero from the sustain level when gate is False. Times range from 100ms to 7 seconds.

10. Out. This is the primary voltage output, with levels ranging from 0 to 7.5V.