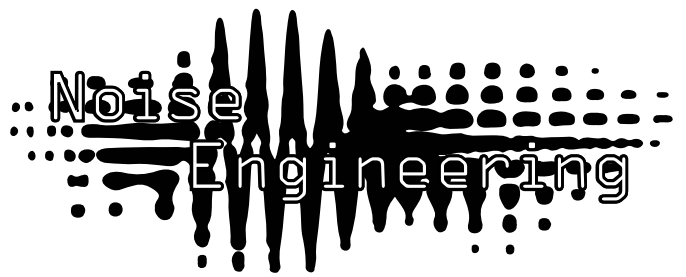


# Noise Engineering Clep Diaz

Multimode step CV generator & LFO



## Overview

Type	Step CV Generator
Size	4HP Eurorack
Depth	.8 Inches
Power	2x5 Eurorack
+12 mA	44 mA
-12 mA	10 mA

Clep Diaz is a handy and small step CV and LFO generator. In step and random modes, use the encoder to control the number of steps in the sequence; in LFO mode, the encoder controls the amplitude of the wave. Toggle the directionality of the sequence: up, down, or up/down to customize the CVs further. CD also gives CV control over the number of steps in the sequence and a beginning-of-cycle trigger output. Unipolar and bipolar outputs allow maximal control.

## Etymology

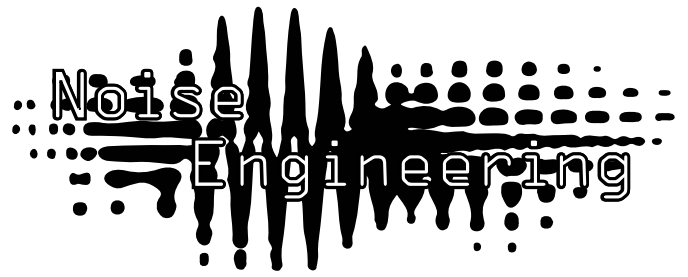
Clep -- from Greek Clepsydra: a time keeper that uses water flow

Diaz-- from Greek Diazoma: divider

“Divided time keeper”

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## Interface

**step/rand/lfo:** Mode switch to move between Step, Random, and LFO modes.

In Step and Random modes, CD outputs a sequence of a controllable number of steps; use the Count encoder (below) to set. In Step mode, steps will move only in the chosen direction (resetting at the end of the cycle). In Random mode, CD randomizes the values of the steps in the sequence to create variation. In LFO mode, CD outputs a smooth noise LFO based on the timing of the input clock. As the Count knob is turned CW, the amplitude is increased.

If the number of steps in the sequence is divisible by three, the top LED will glow dimly; if it is divisible by four, it will glow brightly.

**up/updn/dn:** In Step and Random modes, this determines the directionality of the steps. In LFO mode, this controls the symmetry of the wave: Up subtly decreases the slope of the rise of the wave, updn makes the LFO wave symmetrical, and dn subtly decreases the slope of the decay of the LFO wave.

The max number of steps in up and down modes is 32. In updn mode, the max is 63 steps.

**Count:** An encoder. If no lights are lit on the LED counter, the CV is muted. Turn CW to increase the number of steps in the CV sequence. Tap the encoder to mute the sequence. A second tap will unmute CD, or return it to the state it was in before it was muted. LEDs illuminate to serve as a guide for the number of steps in the current sequence.

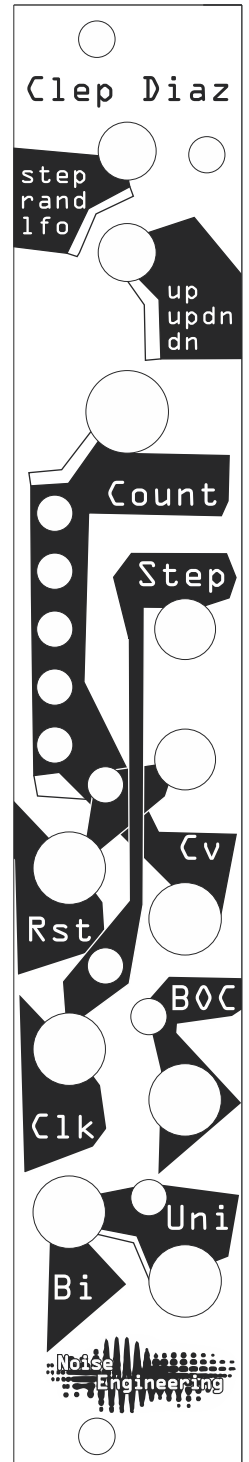
**Clk:** Clock input. Advances the current step.

**Rst:** Optional clock input to reset CD at the beginning of the pattern.

**CV:** CV input control over the number of steps in the cycle

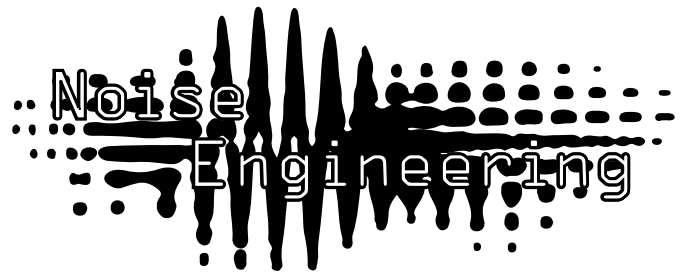
**BOC:** Outputs a single trigger pulse at the beginning of each cycle. In LFO mode, this is random.

**Bi/Uni:** Bipolar and Unipolar CV outputs. Outputs are not quantized.



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## Patch Tutorial

Move the mode switch to Step. Patch a clock into the CLK input. Patch Uni or Bi outs (or both) to the CV inputs of a module of your choice. Increase the number of steps by turning the encoder CW. Play with modes, directions, and number of steps.

CD was not designed for use with pitch CV and does not provide a quantized output.

## Input and output voltages

CD expects a clock signal of at least 2.2v and responds to CV of up to 4.7v. Unipolar voltage outputs 0 to 5V and bipolar outputs -5 to +5v.

## Design Notes

CD was another one of our problem children. It went through a hoard of revisions while we tried to agree on a core set of features. At different times, CD was 4hp, 6hp, and even 8hp before we settled on the final size. Once we agreed on 4hp, we knew that we could fit 3 modes into the module, and that was yet another challenge, which went through multiple revisions before we settled on the final feature set.

## Special Thanks

Shawn Jimmerson  
Patrick O'Brien