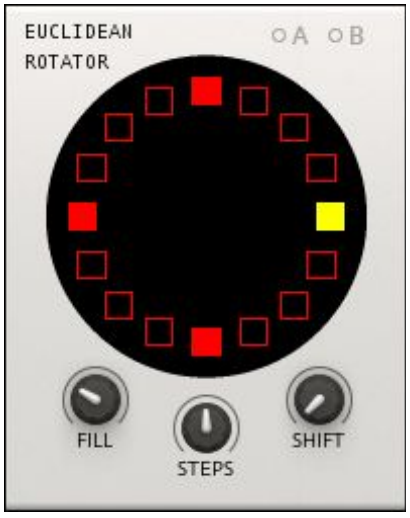
# EUCLIDEAN ROTATOR

## Reaktor 6 Block



# EUCLIDEAN ROTATOR

The Euclidean Rotator block is based on the 'Euclidean Rhythm' concept.

It can be used for a variety of tasks including sequencing, clock dividing, modulation and even as an oscillator.

## Controls

### Steps

The number of steps from 1 to 32. The fill and shift settings are proportional to the number of steps.

### Fill

How many steps are filled or active. From zero to the total number of steps.

### Shift

Pattern offset from zero to the total number of steps

## Inputs

### Gate

A positive zero-crossing at the gate input will advance the internal clock by 1 step. If the step is ON (filled) then the incoming gate signal is converted to a boolean / logic value (0 or 1) and sent out of the Gate output.

### Reset

A positive zero-crossing at the reset input will sent the internal clock back to the zero position (the first step)

## Mod A / B

All modulations run at 15khz so can be used with all types of audio signal.

For example using an oscillator as a modulation source can generate interesting waves via the ‘Val’ output.

The MOD options on View B allow you to latch the modulation using the incoming Gate signal. This is effectively a Sample and Hold for the modulation signals.

## Outputs

## Gate

For active steps this is the logical value of the incoming clock (1 if above zero, 0 otherwise)

## Reset

This is 1 when the first step is active and zero otherwise.

## Val

The Val output is calculated by treating the current sequence as binary and then scaling that value between 0 and 1.

For example, if the number of steps is 4 the maximum value is 15.

A binary sequence of 1 0 0 0 as an integer value is 8.

This value of 8 is divided by the maximum 15 and the output is 0.5333…

Keeping the **Fill** and **Steps** values constant and changing **Shift** is equivalent to the binary shift left / right operator (<< and >>) and will either double or halve the value depending on the direction.

To extend the 4 bit example :

Shift 0 : 1 0 0 0 -> 0.5333..

Shift 1 : 0 1 0 0 -> 0.2666..

Shift 2 : 0 0 1 0 -> 0.1333..

Shift 3 : 0 0 0 1 -> 0.0666..

## Clk Pos

Clock Position Output. Range [0..1]

The Clock option in View B determines the output range :

CLK NORM : Normal scaling, 0 -> (Step / Total Steps)

CLK SCALE : 0 -> 1, Step / (Total Steps - 1)

For example with CLK NORM and 4 steps the values will be 0, 0.25, 0.5 and 0.75, whereas with CLK SCALE they will be 0, 0.33, 0.66 and 1.