



## 2 separate channels

Modor's Formant filter has 2 separate channels. These can be used as stereo channels or in a full duophonic setup.

- \* If only input IN1 has a cable connected, both channels use IN1
- \* If only CV1 has a cable connected, both channels use CV1

## Vowel editing

The 3 leds above the SHIFT button indicate which of the three vowel slots (full left - center - full right) is selected for editing. This selection is done by turning the FORMANT knob.

By pushing the VOWEL button, you can enter a preset vowel in the selected vowel slot. These are the 10 different vowels of the Dutch language: A-E-O-I-OE-EI-EU-AO-U-UI.

By pushing SHIFT+VOWEL all settings are saved and are restored on startup.

The 1-2-3-4 knobs can be used to create your own 'user' vowels next to the 10 presets:

- \* Set the 4 bandpass frequencies using the 1-2-3-4 knobs
- \* Set the 'presence' of the first 3 formants using SHIFT+1-2-3
- \* Set the vowel's relative volume using SHIFT+4

## Instability - Safety compressor

When you start editing your own vowels, you'll quickly notice that the formant filter quite often 'collapses' in an outburst of white noise. On illegal combinations of the formant frequencies & formant presences the filter becomes unstable and outputs very loud white noise.

This noise is limited by a safety compressor to avoid damage to your ears or speakers. It's not entirely silenced however, to show that the filter is still active and instable, but not broken.

User editing by using the 1-2-3-4 knobs can be considered as 'advanced editing'. It's not so easy to make stable and good sounding vowels. Start with the preset vowels using the VOWEL button at first.

## Tips

- \* Make stereo formant effects from a sound source at IN1 using two different CV's on CV1 and CV2. Use the outputs OUT1/OUT2 as stereo L/R
- \* The effect of the Formant Filter is best heard on an input that has a broad range of frequencies. A sawtooth waveform played in the lower octaves is a good example, or maybe just a plain white noise source. While on a triangle or sine wave, you'll barely notice the formant filter's effect.



# FORMANT FILTER



## What is a formant filter?

A formant Filter can be seen as a group of parallel bandpass-filters, that pick up a set of frequency bands out of the input sound. On the Modor formant filter there are four of these BP filters.

The 4 frequencies of these BP filters together make up a certain 'vowel'. For example the A has BP frequencies at 800, 1150, 2850 and 3800Hz, the E at 350, 1200, 2700 and 3800Hz, the I at 265, 2100, 2900 and 3300Hz, and so on...

Modor's Formant Filter puts 3 of those vowels - bandpass frequency combinations - behind the full left, center and full right positions of the FORMANT knob. Turning that knob morphs continuously between those vowels. It makes those passband frequencies glide from one position to another.

There's also a CV control (CV1/CV2 inputs) for this vowel morphing parameter, attenuated by the AMOUNT-knob.

