VOLTATOR

Analog voltage controller

KAONA

Ingenious Instruments for Creative Minds

Introduction

Voltator is a 4-channel analog controller designed for precise and versatile CV voltage management. Equipped with four integrated voltmeters, it displays real-time output voltage levels on each channel.

It is the ideal tool for simultaneously tuning multiple VCOs from a single point, creating chords, easily transposing notes and chords, or precisely adjusting your signals.

Main Functions:

Voltage Generator
Each channel can generate a voltage ranging approximately from –4.5 V to +4.5 V, and up to around –9 V to +9 V using the global transpose feature.

Voltage Adder/Subtractor
Each input can receive an additional voltage of up to ±4.5 V.

Global Transpose
Allows simultaneous addition or subtraction of voltage across all channels using a dedicated potentiometer and CV input.

Signal Multiplier
Globally amplifies or reduces the transpose signal.

Specifications:

Width: 12 HP

Current Consumption: +12 V: 40 mA; –12 V: 30 mA; +5 V: 0 mA

Depth: 28 mm

QUICK START

Amplifies or attenuates the "Transpose" CV signal

Transposes all four tracks simultaneously

Track 1: Adds or subtracts voltage, precisely adjustable via "Fine". Result visible on the associated voltmeter.

Track 2: Same as Track 1

Track 3: Same as Track 1

Track 4: Same as Track 1

CV input for each track

Output for each track

"THRU" buttons activate/deactivate additional voltages per track

CV input for transpose

Detailed Operation:

Voltage Generator

Voltator can generate different voltages on each of the outputs OUT1 to OUT4, ranging approximately from –4.5 V to +4.5 V, and up to –9 V/+9 V depending on the position of the “Transpose” potentiometer.

Example Patch:

- No signal connected to inputs IN 1 to IN 4.
- Turn “Track 1” to “Track 4” potentiometers to set desired voltages, displayed in real-time on each dedicated voltmeter. Fine adjustments can be made using the “Fine” potentiometers.
- The “Transpose” potentiometer adds or subtracts ±4.5 V across all channels.
- The “THRU” buttons activate or deactivate outputs, allowing offline adjustments or temporary addition of voltages. When a channel is deactivated, its corresponding voltmeter blinks.

Voltage Adder/Subtractor

Voltator can add or subtract voltage from signals received at inputs IN 1 to IN 4, directing the results to outputs OUT1 to OUT4. Individual channel adjustments are approximately ±4.5 V, with a total range of approximately ±9 V depending on the “Transpose” position. The resulting voltage is always limited by the Eurorack power supply (approximately ±11.5 V).

Example 1: Centrally tune multiple VCOs by connecting their 1 V/oct inputs to Voltator’s IN inputs. This also easily creates chords.

Example 2: Convert a bipolar envelope (or LFO) to unipolar (and vice versa) by adding or subtracting a DC component.

Example Patch:

• Connect a CV signal (envelope, LFO, 1 V/oct voltage, etc.) to the IN inputs.

• Adjust voltages by turning “Track 1” to “Track 4” potentiometers. Results are displayed in real-time on the voltmeters. Fine adjustments are available via “Fine” potentiometers.

• The “Transpose” potentiometer allows global adjustment of ±4.5 V.

• The “THRU” buttons allow direct passing of input signals to outputs. The corresponding voltmeter blinks, still displaying the resulting voltage.

Global Transpose

• The “Transpose” potentiometer simultaneously adds or subtracts about ±4.5 V to all four channels. The “Transpose” CV input allows additional external variations.

• Example 1: Simultaneously vary the pitch of multiple VCOs using the “Transpose” CV input.

• Example 2: Multiply a single envelope into four envelopes with different amplitudes using “Transpose”.

• Example 3: Play chords by entering a 1 V/oct signal into the “Transpose” CV input, controlling four different VCOs simultaneously.

Multiplier / Divider (“Scale”)

Allows amplification or attenuation of the signal entering the “Transpose” input. Activate/deactivate using the “Scale on/off” button. When “Scale” is active, a dot appears at the top of each voltmeter display.

Example 1: Distribute one envelope with four simultaneous amplitude variations.

Example 2: Convert a digital 0-5 V envelope into four distinct bipolar signals with different offsets and amplitudes.

Voltmeter

Voltator can also function as a simple voltmeter. Caution: it is not designed for voltages outside Eurorack specifications (±12 V max.).

Example Patch:

• With no cables connected to IN inputs, set “Transpose”, “Track”, and “Fine” potentiometers to zero so the voltmeter displays 0 V.

• Connect the signal to measure to the desired IN input; Voltator displays the input voltage on the corresponding voltmeter.

Calibration

Voltator is calibrated before shipping, but you can recalibrate it if necessary. You will need an accurate voltmeter.

Procedure

Turn off your equipment, remove the module from its rack position, and place it on a sufficiently large plastic insulating surface.
You will find a small push button on the back of the module.

Step 1

- Turn on the power and wait a few minutes.
- Press the calibration button: the display shows “-8 V”.
- Turn the «Transpose» potentiometer fully to the left.
- Connect your voltmeter to output 1.
- Turn the “Track 1” potentiometer to the left until exactly -8.00 V is displayed. For more precision, use the corresponding “Fine” potentiometer.
- Repeat this process for tracks 2 through 4.

Step 2

- Press the button again: the display shows “+8 V”.
- Turn the “Transpose” potentiometer fully to the right.
- Connect your voltmeter to output 1.
- Turn the “Track 1” potentiometer to the right until exactly +8.00 V is displayed. For more precision, use the corresponding “Fine” potentiometer.
- Repeat this process for tracks 2 through 4.

Step 3

- Press the button again: the display shows “0 V”.
- Connect your voltmeter to output 1.

• Adjust the “Transpose” potentiometer until your voltmeter reads exactly +4.00 V.
• Then adjust the “Track 1” potentiometer until exactly 0.00 V is displayed.
• Repeat this process for tracks 2 through 4.

Step 4
• Press the button again: calibration is complete.

Turn off your equipment before reinstalling Voltator into its rack position.