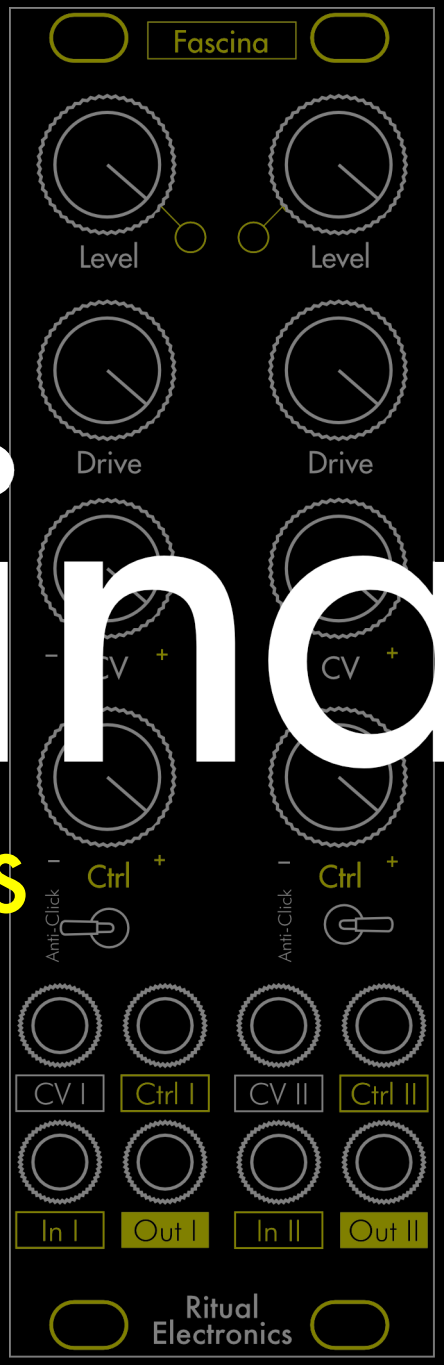
Fascina

Ritual Electronics



Fascina
Level
Level
Drive
Drive
- CV +
- CV +
- Ctrl +
- Ctrl +
Anti-Click
Anti-Click
CV I
Ctrl I
CV II
Ctrl II
In I
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Ritual Electronics

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Thank you for purchasing Ritual Electronics Fascina.
Your module has been assembled with care in our studio in the heart of Provence, France.

You can find your module on Modulargrid:
https://www.modulargrid.net/e/ritual-electronics-fascina

For any remarks and informations, contact us at:
contact@ritualelectronics.com

For video demos and patch ideas check:
https://www.instagram.com/ritualelectronics/

Limited warranty

Ritual Electronics warrants this product to be free of defects in materials or construction for a period of one year from the date of purchase.

Malfunction resulting from wrong power supply voltages, backwards or reversed eurorack bus board cable connection, abuse of the product or any other causes determined by Ritual Electronics to be the fault of the user are not covered by this warranty, and normal service rates will apply.

During the warranty period, any defective products will be repaired or replaced, at the option of Ritual Electronics, on a return-to-Ritual Electronics basis with the customer paying the transit cost to Ritual Electronics. The return of your module is on us.

Ritual Electronics implies and accepts no responsibility for harm to person or apparatus caused through operation of this product.

Installation

Always power off your Eurorack case before installing or removing a module.

Avoid touching any electrical contacts when connecting the Eurorack bus cable.

Ensure the red stripe on the 10-pin power cable is aligned with the red stripe marking on the PCB.

Power requirements *(maximum values under intensive use)*:

+12V: 117 mA

–12V: 71 mA

+5V: 0 mA

Mechanical specifications:

Fascina requires 8HP of space in a standard 3U Eurorack row.

Module depth is 25 mm, including the power connector.

Overview

Fascina is a dual VCA with anti-click dynamics, CV & audio control, and hard hitting gain.

The anti-click circuit preserves clean VCA behaviour even with ultra-snappy envelopes, making Fascina especially well-suited for tight basslines and percussive sounds.

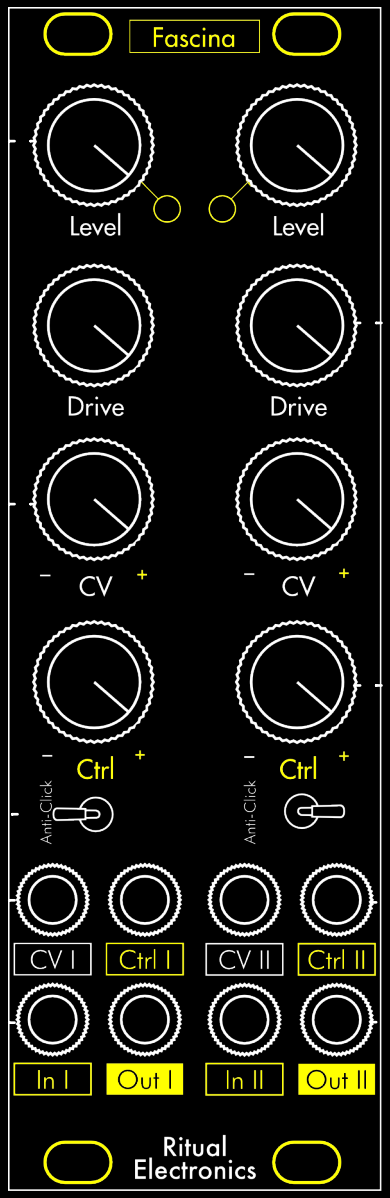
CV attenuverters allow precise level control and make it easy to turn levels up or dynamically duck pads and drones using CV.

The audio control input lets another audio signal modulate the VCA. With its dedicated attenuverter, this signal can be used for either ducking or expansion, opening the door to complex dynamics and side-chaining effects.

In true Ritual Electronics fashion, Fascina offers generous gain, allowing it to double as a powerful voltage-controlled saturator and hard limiter.

The different blocs making up Fascina make it a very patch programmable VCA.

Fascina controls



Level knob
Sets the initial level

Drive knob
Pushes the VCA into the limiter

CV attenuverter knob
Attenuate and/or invert the CV input signal

Ctrl attenuverter knob
Attenuate and/or invert the Ctrl input signal

Anti-click on/off switch
Toggles the anti-click system

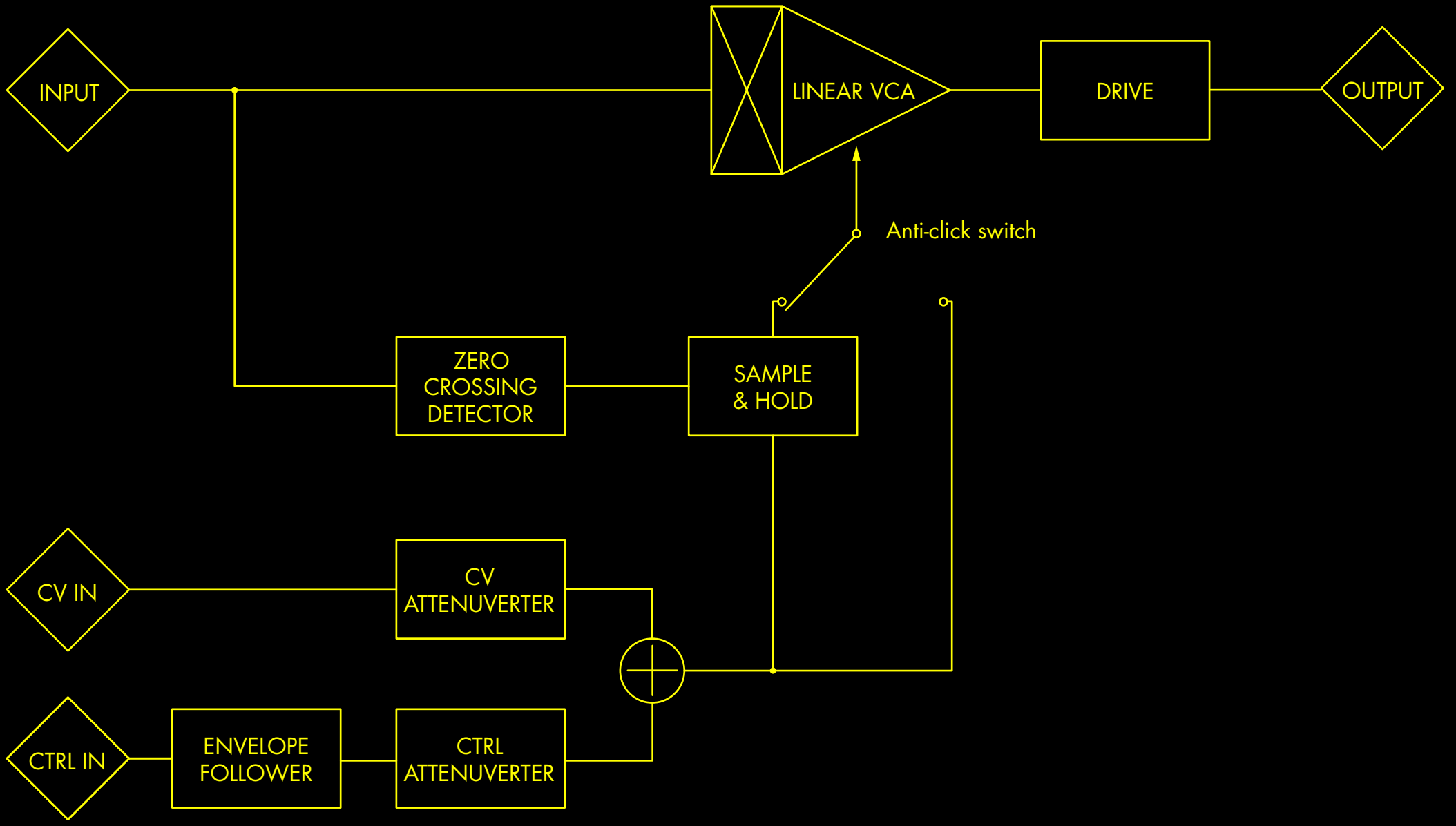
VCA CV Input
Toggles the anti-click system

Control Input
Audio input to the control VCA input

VCA Input
Audio or CV input to the VCA

VCA Output
Audio or CV output of the VCA

Block Diagram



Basic dynamics

The Level knob sets the VCA's base gain (or bias, if you prefer). Fully counter-clockwise, the gain is 0 and the VCA is silent when no CV or Control signals are applied. Fully clockwise, the signal is amplified up to 1.2×.

The CV knob attenuates and/or inverts the incoming CV signal. This processed CV is summed with the base level set by the Level knob.

The Control knob attenuates and/or inverts the Ctrl input, which is typically an audio signal. This signal is passed through an envelope follower with fixed attack and release times, and the resulting envelope is summed with the base level.

The Drive stage is located after the VCA and is used to push the modulated signal into an unapologetic zener limiter for bold, saturated results.

Control input

The Control input (labeled Ctrl on the module) is one of Fascina's defining features. It is primarily designed for audio signals, though CV sources can also be used effectively and creatively.

The incoming Ctrl signal is processed by an envelope follower, which extracts its amplitude over time. For example, feeding a kick drum into the Control input will generate a control signal that follows the kick's amplitude envelope. Effectively turning audio into CV.

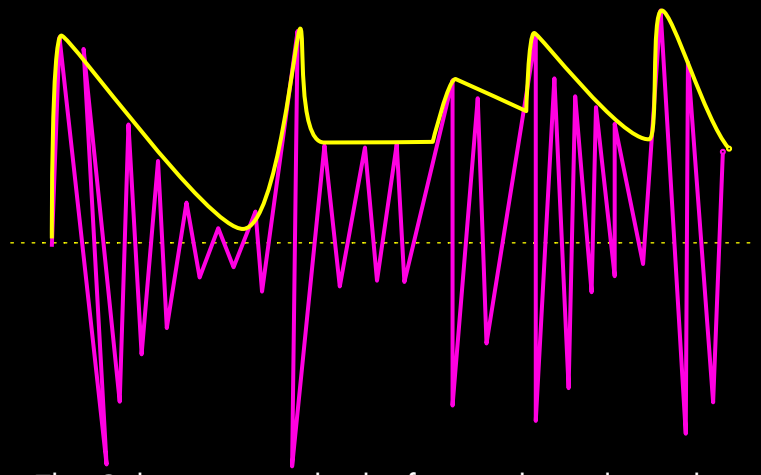
This is the same type of circuit found in compressors and sidechain paths. While such circuits often provide adjustable attack and release times, Fascina uses fixed values—keeping the behaviour simpler, predictable, and focused on its role as a VCA.

The attack time is roughly 5ms.

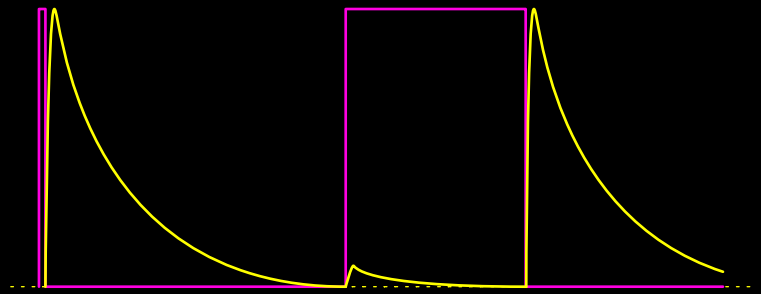
The release time is about 200ms.

When using the Control input with CV, think of it as a full-wave rectifier followed by a slew limiter with fixed attack and release times. A 50 Hz high-pass filter immediately after the input prevents sub frequencies from overwhelming the detection circuit, DC CV will be strongly affected by the filtering.

That said, feeding a straight gate into the Ctrl input works beautifully for percussive effects.



The Ctrl input smooths the fast peaks and troughs of any incoming audio signals, turning it into a CV version of the audio amplitude.



When sent a trigger Fascina Ctrl input creates an envelope from the falling edge. Same when sent a gate.

Anti-click system

Perhaps even more mysterious than the Ctrl input is the Anti-click toggle switch.

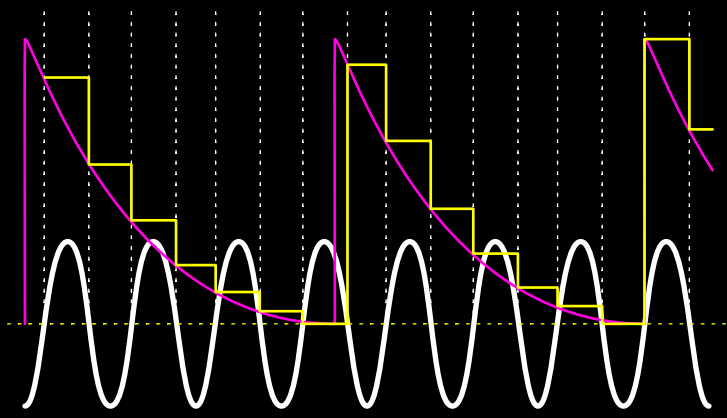
When set to the left, the system is engaged. The anti-click is an analog version of the zero-crossing detector usually found in digital audio generation.

The system samples and updates the CV level (Level + CV in + Ctrl in) every time the VCA's input crosses 0V. This prevents the VCA from opening at non-zero voltage, which would create a sudden DC jump—perceived as an audible thud or click. This effect is especially noticeable with bass-heavy inputs and ultra-snappy envelopes.

Because the system waits for zero crossings, extremely low-frequency signals can introduce a tiny delay. For example, a simple 30 Hz wave (square, triangle, saw etc.) has a zero crossing every 16.66 ms, which can slightly lag the enveloped response.

In practice, the anti-click is usually paired with slower CV sources (like envelopes or LFOs) while the VCA is processing a VCO. Faster CV inputs can produce all sorts of glitches—sometimes delightfully musical, sometimes chaotic—so experiment at your own risk.

I've even started to love the clicks now that I know I can get rid of them whenever I feel like it.



The white sine [input] is cycling at 30Hz - very very low.

The pink envelope [CV] is fast at 8Hz.

The stepped envelope from the anti-click is thus updated at 60Hz.

The stepped nature of the anti-clicked envelope is not perceptible.

Drive

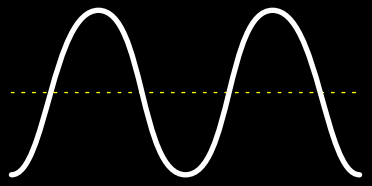
The Drive circuit in Fascina is based on a Zener diode hard limiter. As the VCA's output signal approaches 12 Vpp, the diodes conduct and "chop" the peaks—while also slightly rounding them.

This type of distortion is entirely amplitude-dependent. By modulating the signal's level (how convinient with a VCA), you can create voltage-controlled distortion, turning Fascina into a dynamic, expressive saturator.

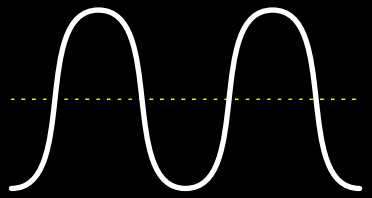
When Fascina is used as a compressor thanks to its Ctrl input, Drive can also turn into a handy makeup gain.

It also works well as a preamp for line level instruments and even guitars and basses.

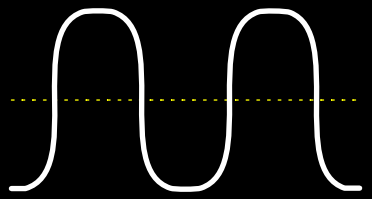
From the illustrations on the right you may think it is not doing much - do not trust the scope here, the Drive adds tons of harmonics without going fully squared and sterile.



Drive knob at 0%
10Vpp sine



Drive knob at 50%
11.8Vpp flattened sine



Drive knob at 100%
11.8Vpp rounded square

Normalization

During Fascina's development, we experimented with various ways to normalize the two channels. Most approaches led to awkward interactions if an attenuverter wasn't set to the 12 o'clock (0) position—so we kept it simple.

Fascina uses a classic dual-VCA mixing scheme on Channel II. If no cable is connected to Channel I Output, its signal is automatically mixed with Channel II's output at the Channel II Output jack, effectively turning Fascina in a two channel mixer.

Compression / Expansion

Fascina's Ctrl input allows for two simple yet extremely effective forms of compression, using the internal envelope follower.

Feed back compression

Feed-back compression derives its control signal from the VCA output, after gain reduction, producing a smoother, more settings dependent response that is often perceived as warmer and more musical.

The classic compressors (Fairchild, LA-2A, 1176...) use this topology.

Feed forward compression

Feed-forward compression detects the input signal before gain reduction is applied.

Moving the VCA controls does not affect the signal sent to the Ctrl input for a more predictable behavior.

Use it for precise compression and a more "modern" feel.

Expansion

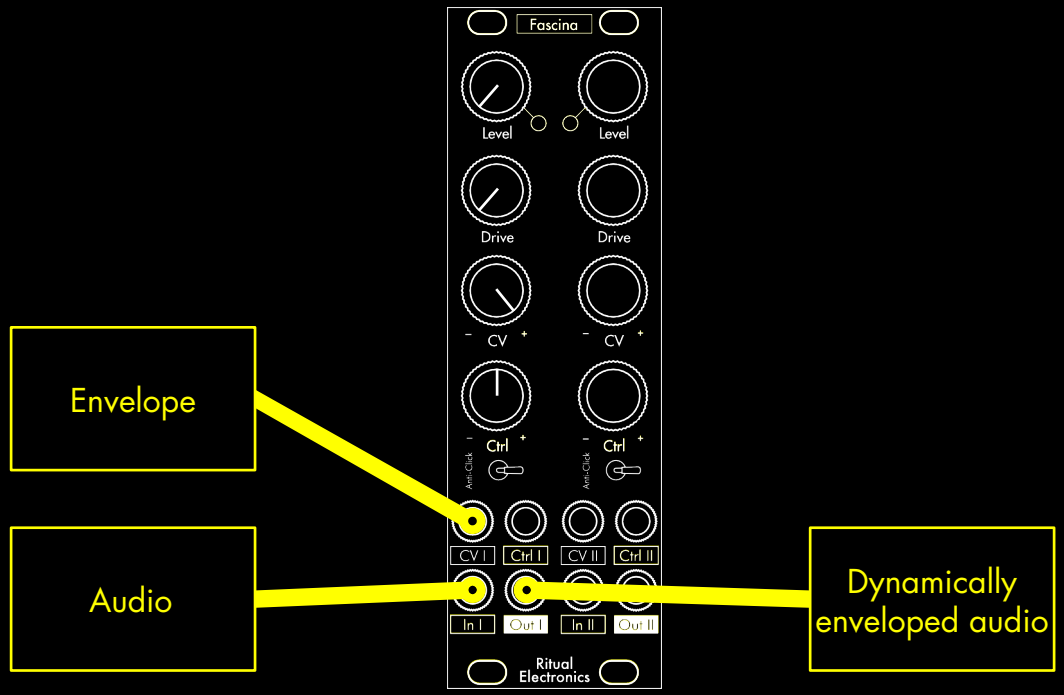
Expansion is the inverse of compression: louder signals become louder instead of quieter. The patching is identical to the compression examples - simply turn the Ctrl attenuverter toward the positive side. Expansion is particularly effective on drones and noisy textures with limited natural dynamics, where it can introduce movement and articulation.

Use Drive as makeup gain!

If your signals get too quiet during compression, apply some Drive to them.

The diodes responsible for the clipping kick off at 12Vpp, giving you room to push the level up before distorting it.

Patch Example 01 - Basic VCA



Let's go back to basics. The Voltage Controled Amplifier is more of a Voltage Controled Attenuator (Fascina is both since it has proper gain, but that's another story).

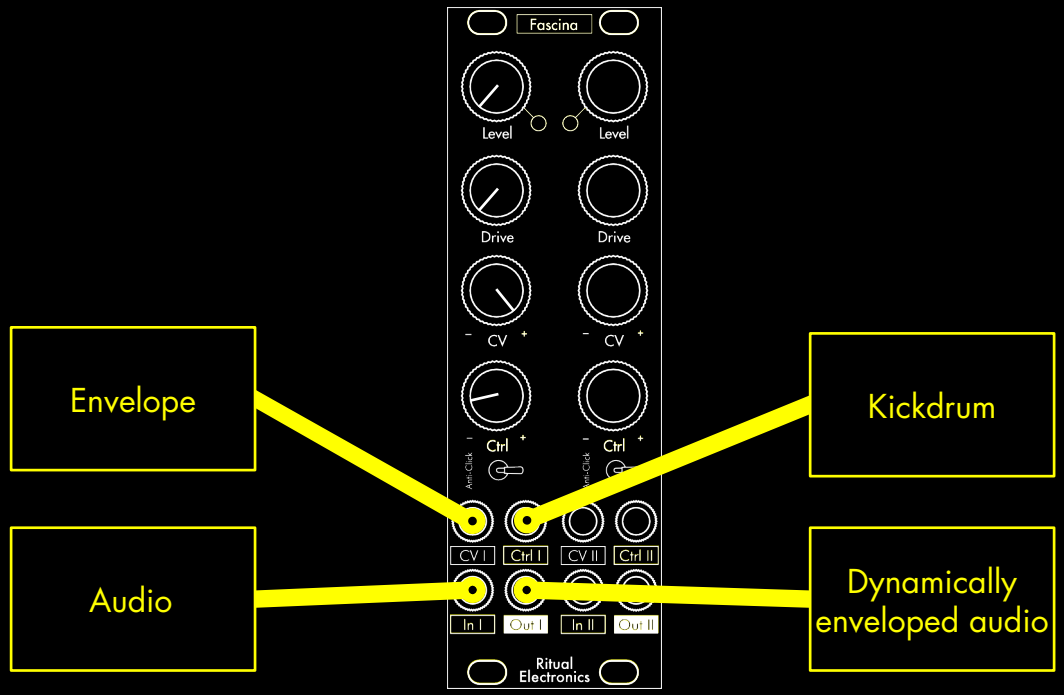
One usually patch a VCO into a VCF into the VCA audio input (labeled In on Fascina). An envelope is classicaly used to open the VCA. Patch it into CV in.

The dynamically enveloped audio is available at the Out jack.

If it clickclickclicks, turn the Anti-Click on (switch to the left).

If it lacks harmonics or agressivity, add some Drive!

Patch Example 02 - Basic VCA sidechained by a kickdrum

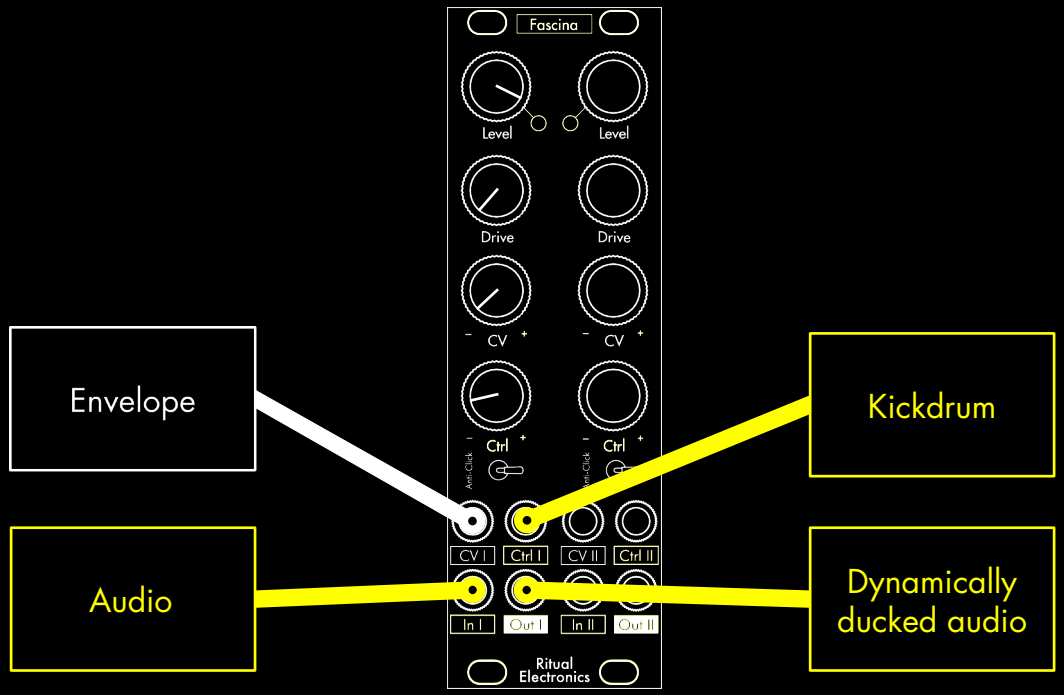


Only a jack away from the previous patch, the introduction of the Ctrl function.

Once you have your synth voice dialed in, patch a kickdrum into the Ctrl input. Turn the Ctrl attenuverter to the minus side (anti clockwise). You'll start hearing the bassline pumping with the kick drum.

I like to say it makes your patches go from modular experiments to proper music in a turn of a pot.

Patch Example 03 - Reverse VCA



For years I've been frustrated by VCAs that don't offer attenuverters on their CV inputs. At Ritual Electronics, we love Noise as a musical language — dense, loud, and often dynamically flat. In that context, a traditional "VCA opens with CV" approach isn't always what you want.

Instead, try this: crank the Level fully open. Then turn the CV attenuverter toward the negative side. Now, whatever you patch into the CV input will reduce the level instead of increasing it.

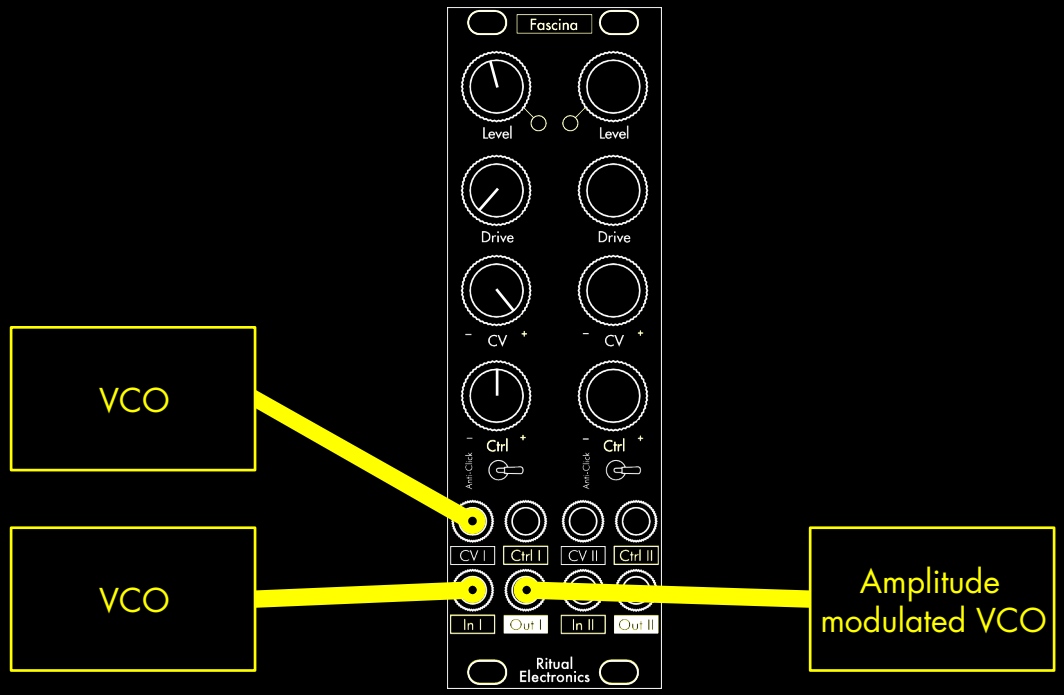
An LFO can gently carve movement into a drone. An envelope can momentarily pull it down.

For rhythmic noise, patch drums into the Ctrl input — the noise will duck and make space for them.

Sometimes dynamics aren't about getting louder.

They're about knowing when to get out of the way.

Patch Example 04 - Amplitude Modulation



FM gets a lot of praise. AM deserves some too. A classic VCA-based amplitude modulation patch can be just as rich and musical as old-school ring modulation.

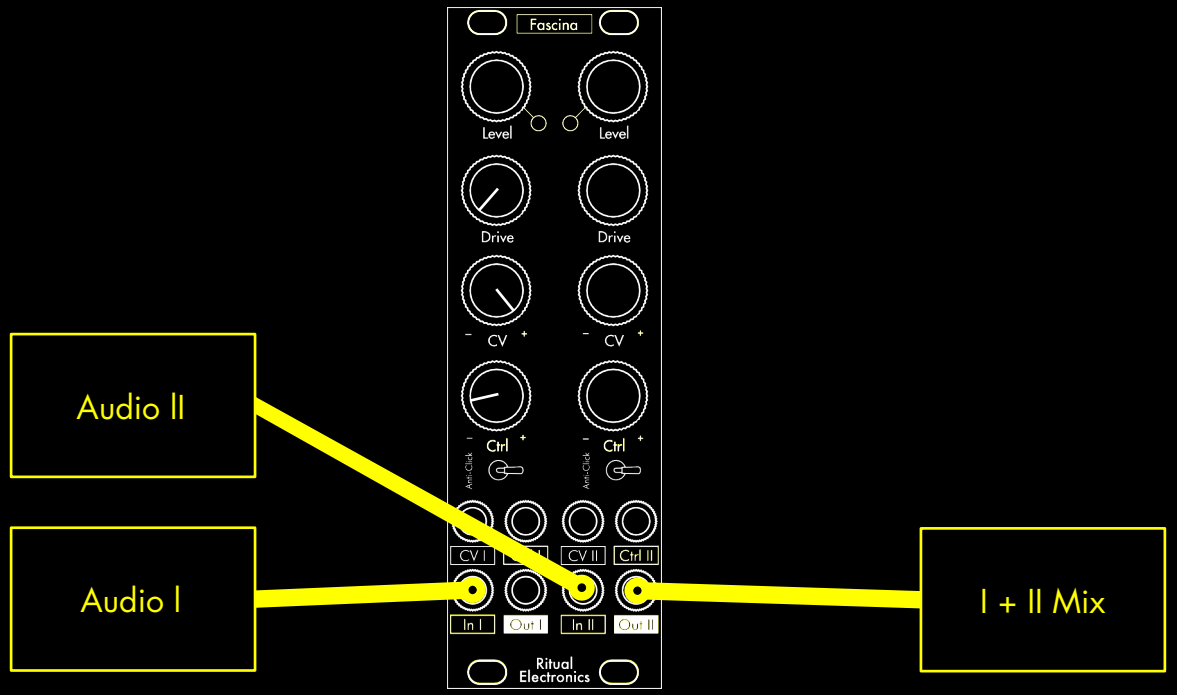
Patch one VCO into Fascina's audio input. Patch a second VCO into the CV input — not the Ctrl input, the CV input.

Set the Level to taste and explore the CV attenuverter on both the positive and negative sides. Each direction produces slightly different harmonic behaviours and textures.

Keeping both VCOs close in frequency creates slow, heavy beating — perfect for doomy, unstable bass tones.

The Anti-Click circuit can significantly mess with the result. For pure AM behaviour, turn it off. But try it on as well. It may be cool.

Patch Example 05 - VCA Mixing



Now you should be able to use each channels in a variety of classic ways.

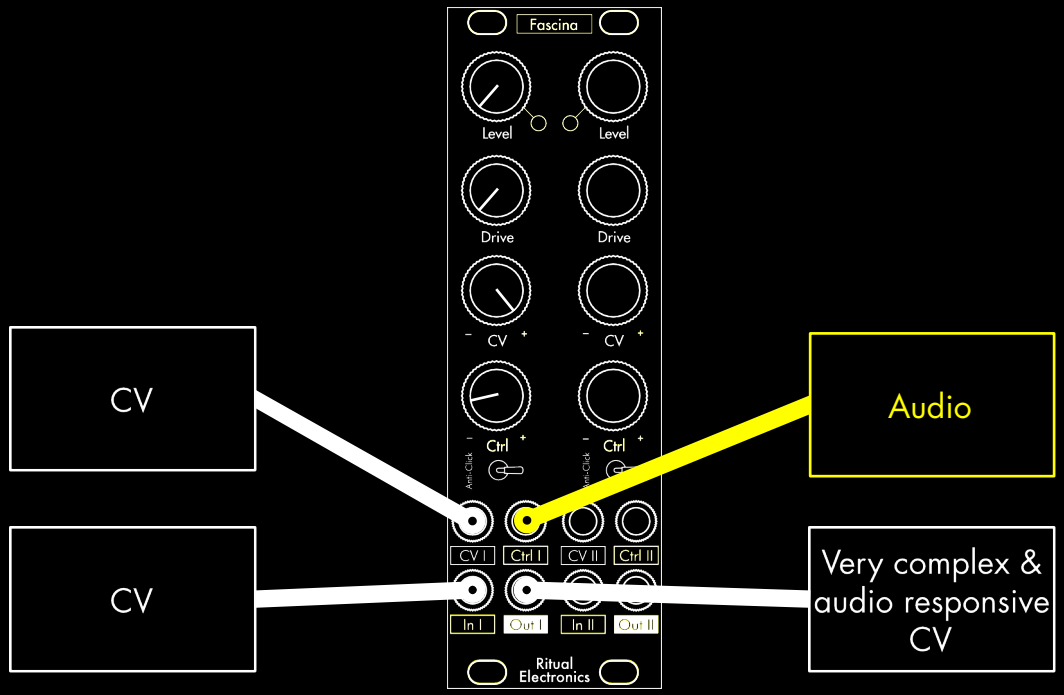
This patch is all about the output normalization - see page 13.

If nothing is patched in Out I, both channels are mixed in Out II.

Nothing more. You don't even have to use CVs. Lot of real estate for a manually controled 2 channel mixer, but sometimes it is just what you need.

Better even, mix CVs. We don't mix CVs often enough. See next page.

Patch Example 06 - CV VCA



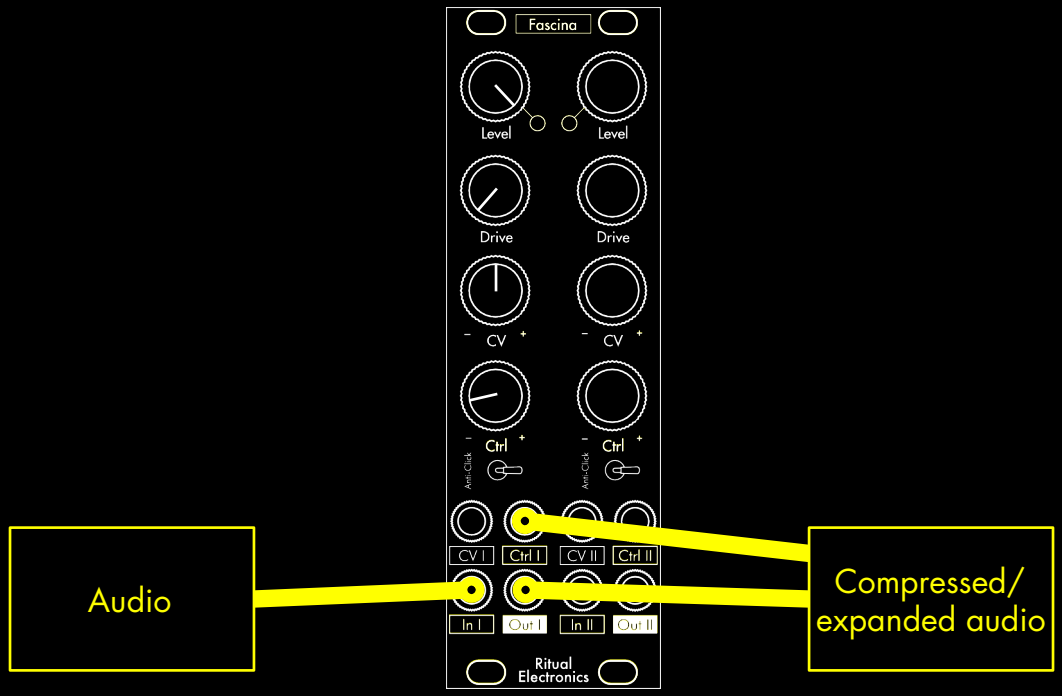
Fascina is based around a linear VCA because of its versatility. It works great for AM, works great with envelope with variable curves... And it works great with CV.

Dynamically modulating CV signals can elevate a good patch into a great one. Modulating two simple CV sources with intention is often more musical than using a complex modulator.

You can even use the audio you are modulating in the Ctrl input, FEEDBACK LOOP ACHIEVED.

With control and intent.

Patch Example 07 - Feed-Back Compression / Expansion



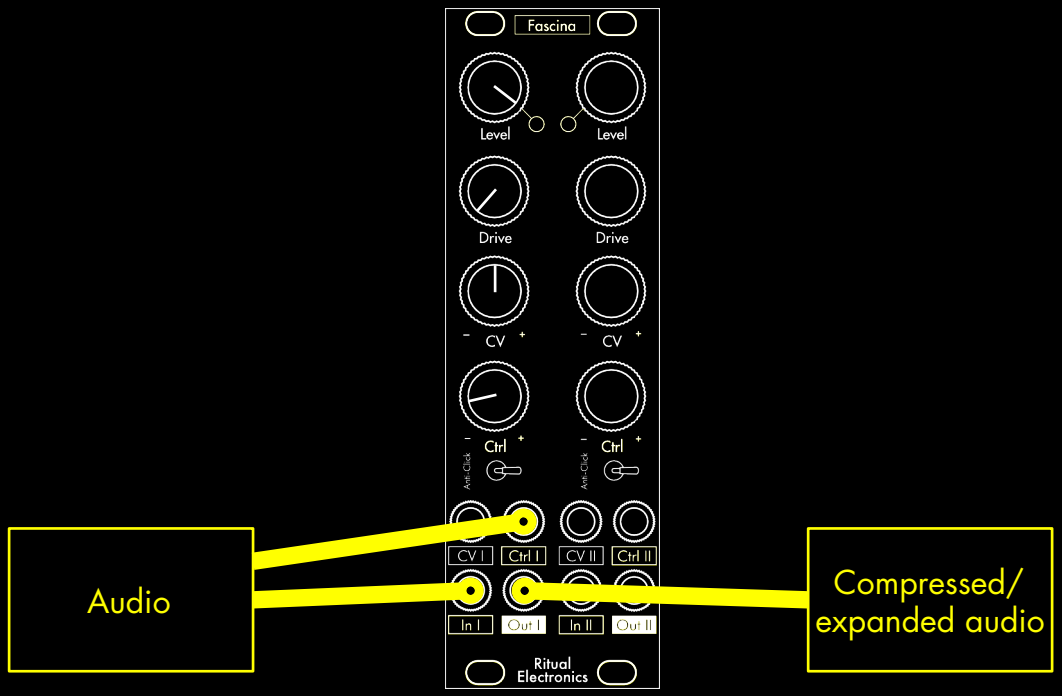
Use an Audio signal with dynamics. A drum mix bus is real nice.

Patch the VCA output to the Ctrl input using a mult. Set the Level control to around 100% and turn the Ctrl attenuverter toward the negative side. As the signal gets louder, it increasingly attenuates itself.

By balancing the Level and Ctrl controls, a wide range of compression behaviours can be achieved despite the fixed attack and release times.

Use the second channel and make it stereo!

Patch Example 08 - Feed-Forward Compression / Expansion

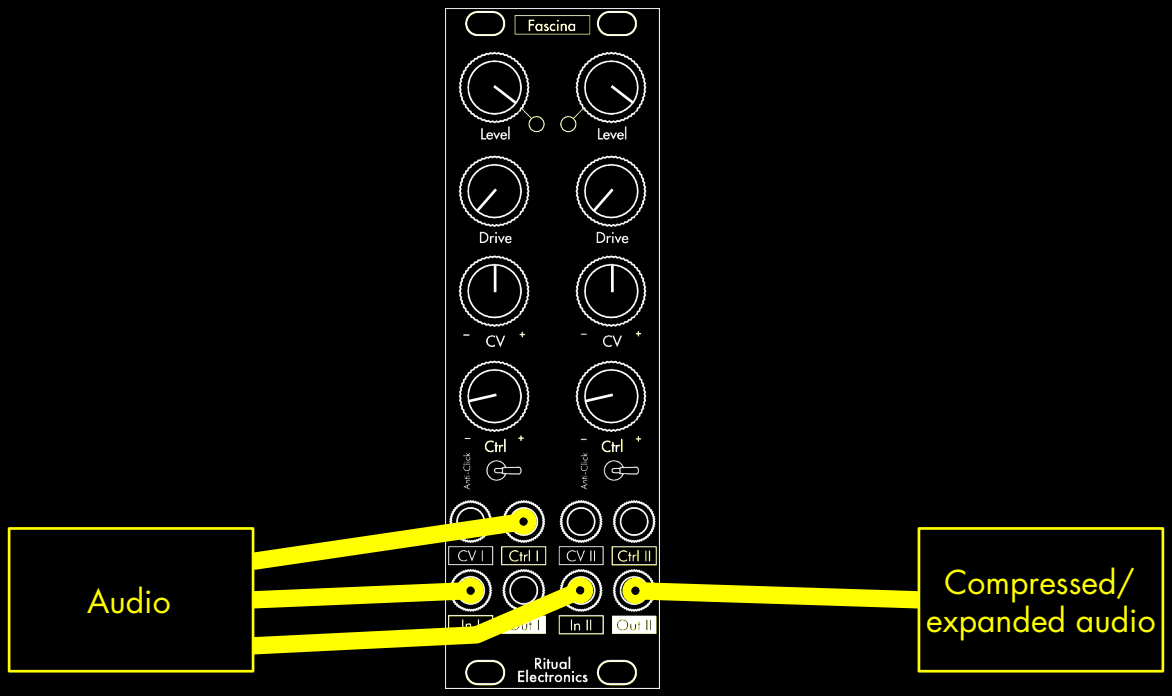


The principle is the same as the feed-back compressor, but this time mult the VCA input to the Ctrl input.

This configuration allows for much more extreme compression. You can turn the Level control very low and set the Ctrl attenuverter close to –100% to achieve very aggressive compression. The Drive stage can then be used as makeup gain.

It remains clean until the signal approaches approximately 11 Vpp, providing ample headroom before saturation occurs.

Patch Example 09 - Parallel Compression / Expansion

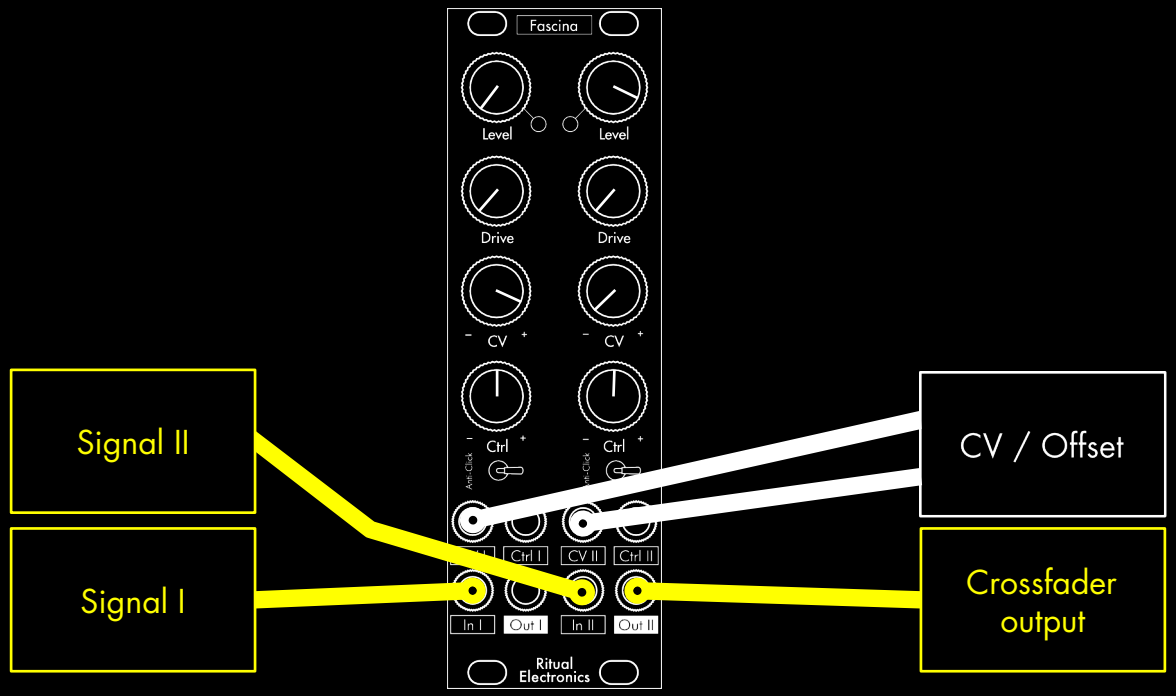


Compression flattens your sound, which in turn help you make it loud.

If you want to have loudness and dynamics, try parallel compression aka New York style compression - compression with a dry / wet.

Taking advantage of the mixing normalization it is easy to do it. Use one channel to compress. Plug nothin in the Output. Mult the compressor's input to the second channel input, take the output from the second channel. Adjust the Level of the second channel to add some dry audio to the compressed audio.

Patch Example 10 - Voltage Controled Crossfader



Crossfading is pretty easy with Fascina. Open one channel and use CV to close it. Keep the other channel close and use the same CV to open it.

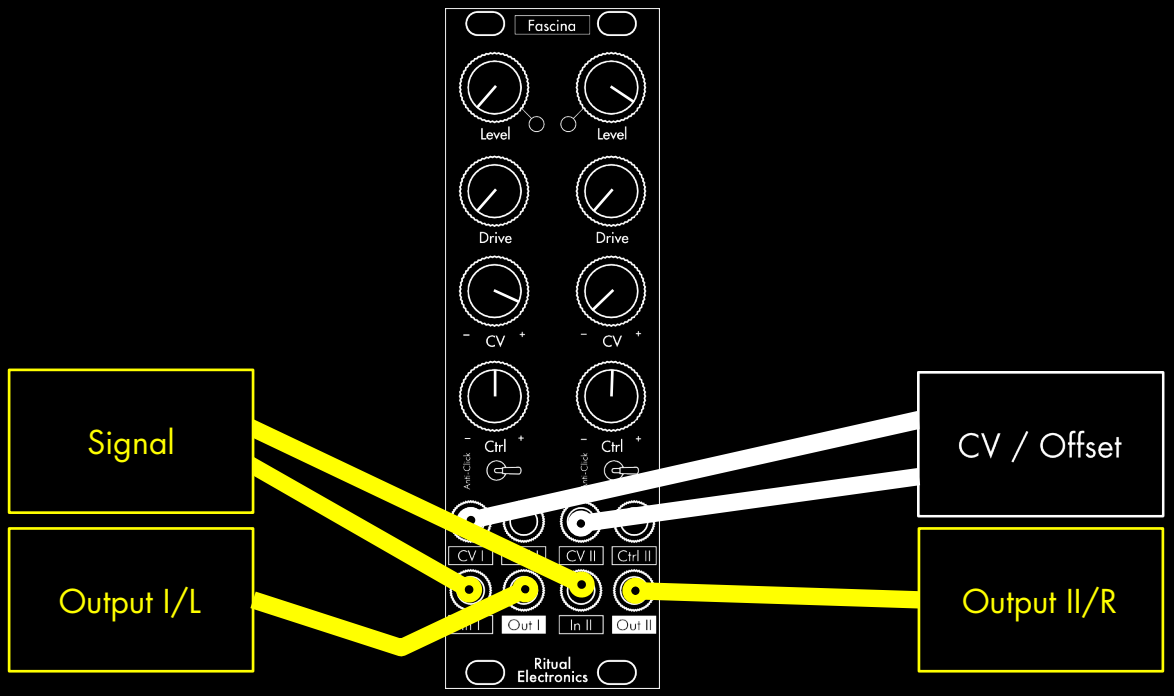
No signal in Out I, grab the mix at Out II.

If you want manual crossfading I would advise to use a 0-5V offset as CV.

The crossfader patch is great with audio and awesome with CV.

Keep in mind Fascina amplifies the signal when all controls are to the max. You may want to fine tune the controls to preserve the original amplitudes, specially with CVs

Patch Example 11 - Voltage Controled Panner

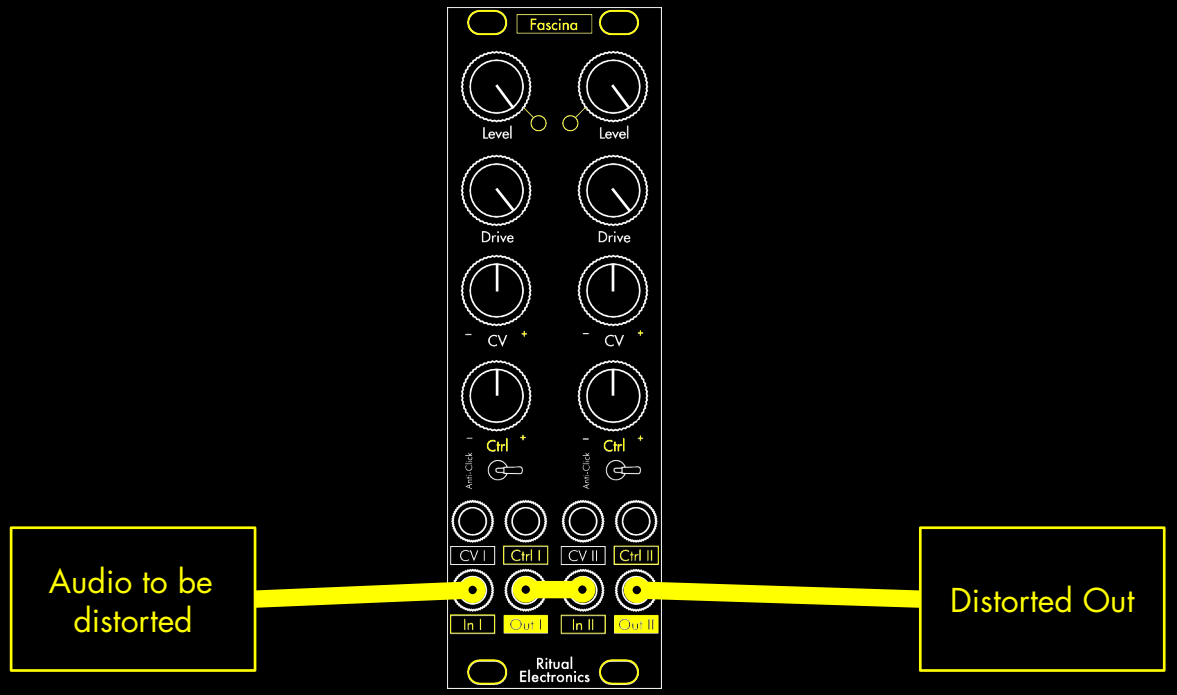


Here, we go for the opposite of crossfading. One signal dynamically sent to two outputs.

I'd advise on stackables for this one (I'd always advise on stackcables to be honest). You'll have to send the input signal to both Ins I & II. The signal used to pan the signal also has to be multed to CVI and CVII.

The outputs can be patched as stereo signals or be used to go into different effects.

Patch Example 12 - Double Drive

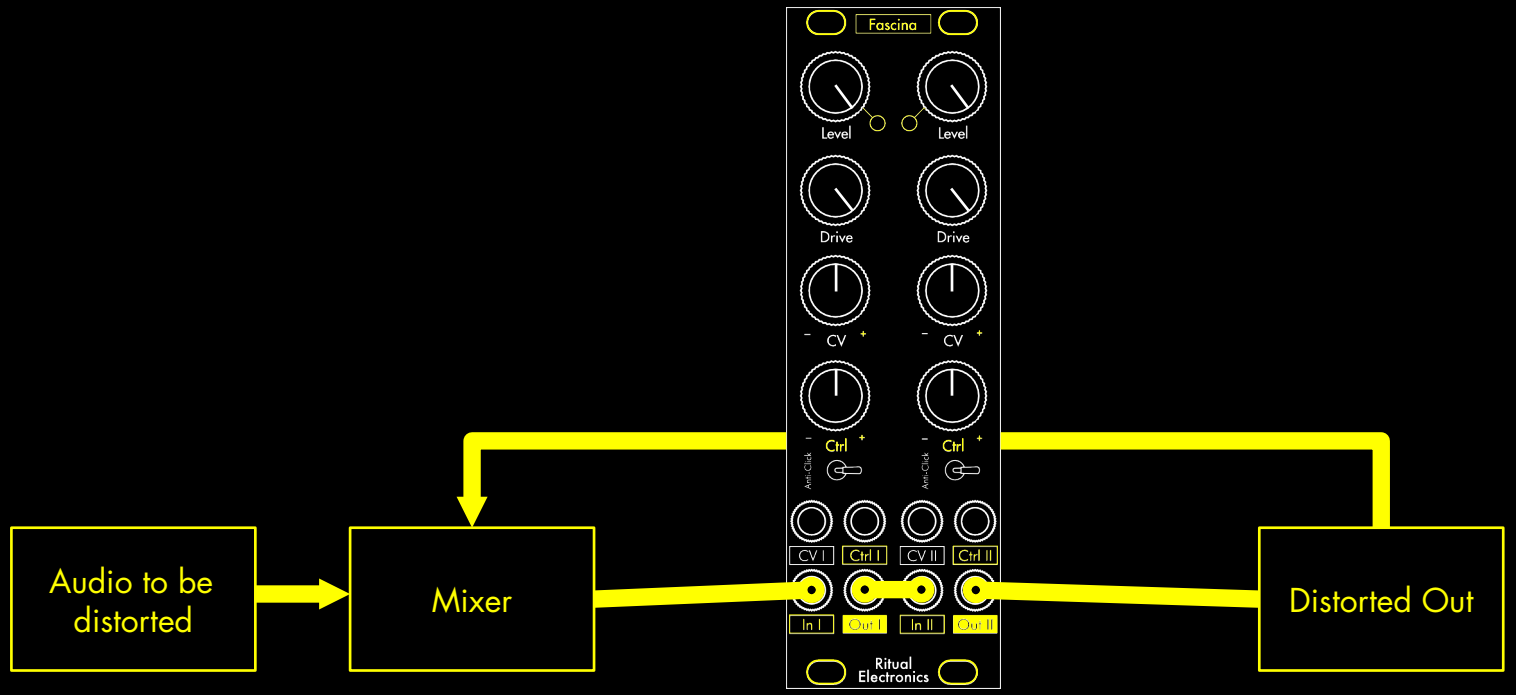


Sometimes, more distortion is exactly what's needed. By placing Fascina's two channels in series, you can push the signal further into saturation.

For more adventurous or sound-design-oriented results, insert a filter between the two channels to shape which frequencies are driven hardest.

Animating each channel with different modulation sources adds movement and complexity, turning static distortion into something alive.

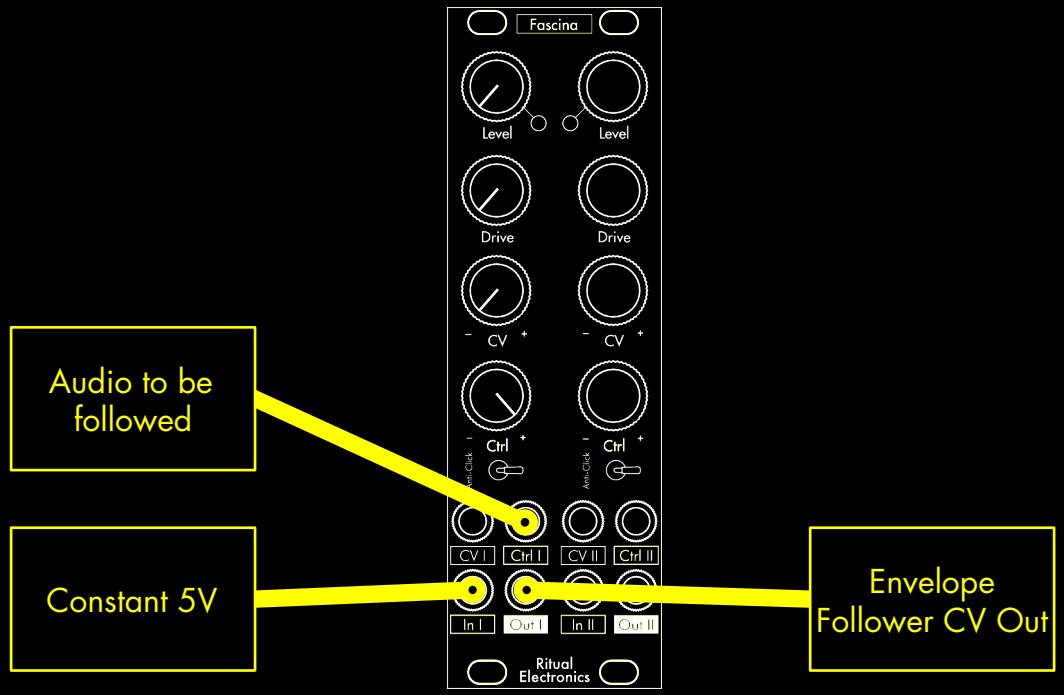
Patch Example 13 - Double Drive with Feedback



Sometimes, more distortion is not enough. You want that extra extra extra grit. Patch back the output in the input. Feedback is always the answer.

Once again, patching another module in the feedback path is highly recommended. Try patching a delay like Crypta. Instant wall of amps feeling.

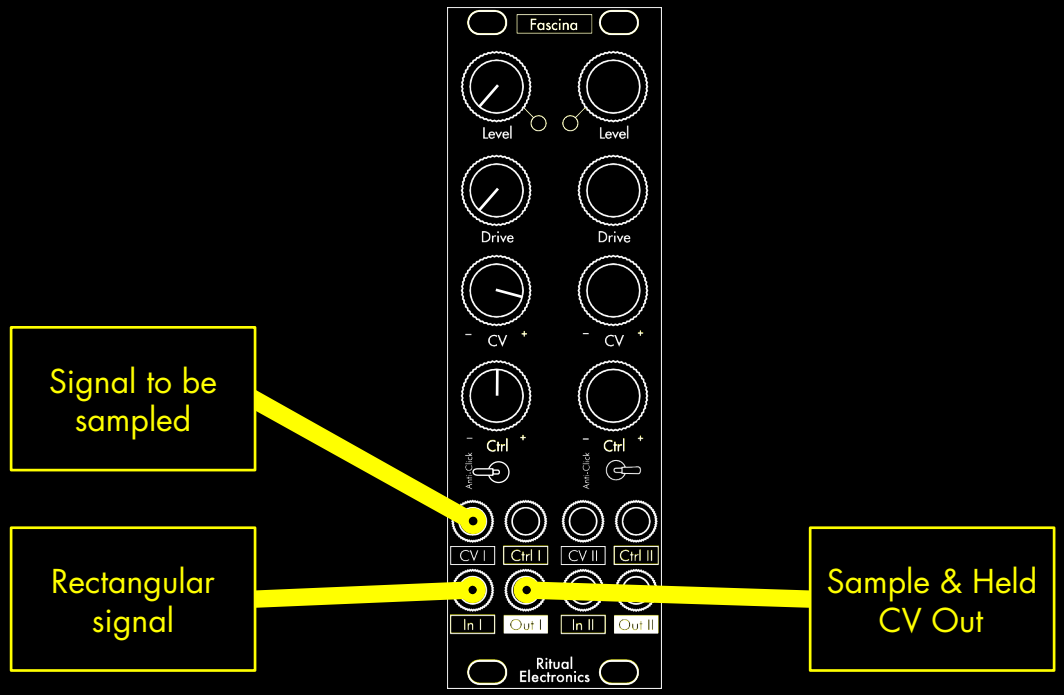
Patch Example 14 - Envelope Follower CV Out



Patching a constant voltage in Fascina's input and modulating it with an audio signal in the Ctrl input gives you a pretty good CV output of the internal envelope follower.

You can then play with the Ctrl attenuverter for different envelope strengths. Add Drive to square the CV up. Fixed timing but very playable.

Patch Example 15 - Sample & Hold CV Out



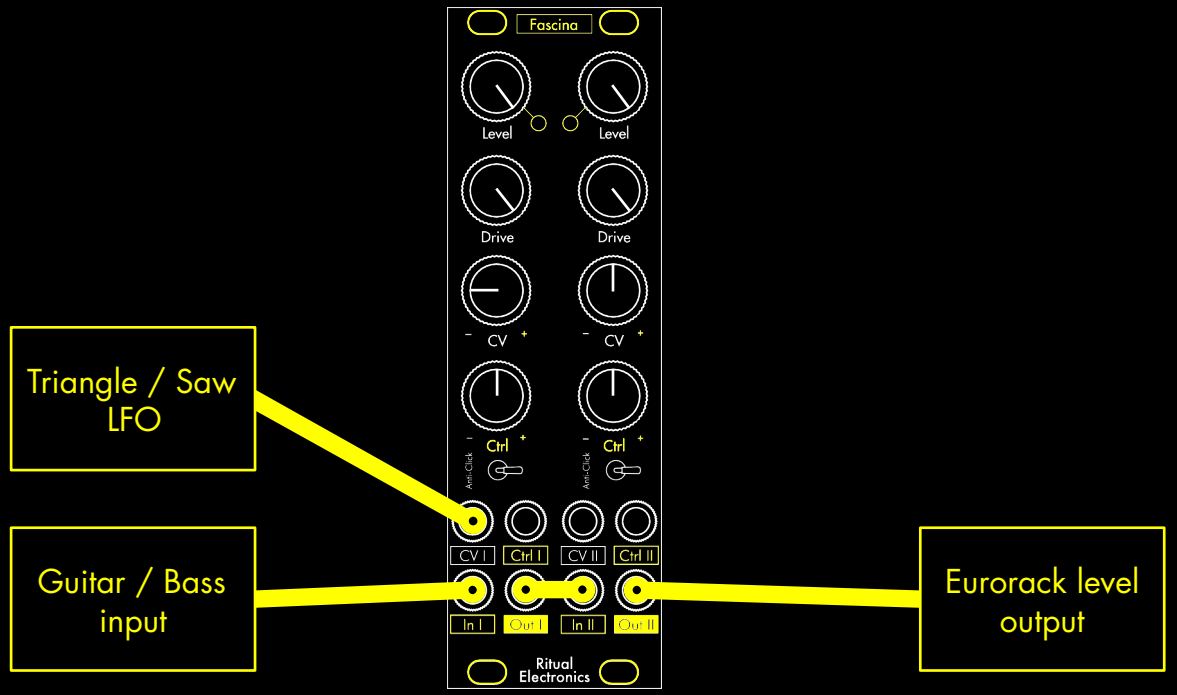
You can get a CV Out from the internal Sample & Hold by patching the signal you want to sample into the CV input and the clock into the audio input.

For classic Sample & Hold behaviour, a clock with pulse-width control is recommended. A 50% duty-cycle square wave spends half its time at 0V, during which the VCA cannot output anything other than 0V.

Using a rectangular wave with a high duty cycle (90% or more) limits the time spent at 0 V to short pulses. These brief zero crossings are enough to trigger the zero-crossing detector, which in turn clocks the Sample & Hold circuit - resulting in proper, traditional S&H operation.

Add a signal in the Ctrl input if you want to flavor your S&H!

Patch Example 16 - PreAmp & Tremolo



We love a good old stringed instrument. We love Spacemen 3 so we love tremolos. You can do preamp + drive + tremolo with Fascina.

Plug your instrument straight into the first input. Crank Level and Drive. Use an LFO into the CV input to create the tremolo thing.

From there if you need or want more gain, stack both channels.

If you want to be fancy, take the output of the last stage and patch it to either Ctrl I or Ctrl II to add a slight compression to the sound. Very good basis to patch your instrument into fancy eurorack effects.