Doepfer — A-130-1

- Manual PDF

Manual PDF

Doepfer A-130 / A-131 VCA: using them for melodic patching

The manual covers two closely related VCAs:

- **A-130** = **linear VCA**
- **A-131** = **exponential VCA**

They are otherwise functionally the same: - 2 audio inputs, each with its own level control - 2 CV inputs, one with an attenuator - gain control - output level control

For melodic music, these modules are not pitch sources by themselves, but they are extremely important for shaping **notes, articulation, dynamics, timbre motion, and keyboard tracking**. In practice, they help turn oscillators, envelopes, LFOs, and sequencer CV into playable melodic voices.

What each module is best at musically

A-131 (exponential VCA): best for note loudness

The manual explicitly says this is the one you'd **normally use for audio signals**. That makes it the more natural choice for:

- final amplitude shaping of a melodic voice
- plucky or expressive envelope-controlled notes
- natural-feeling loudness response
- dynamic accents from envelopes or velocity-like CV

Typical melodic role

Patch: - **VCO audio → A-131 Audio In** - **ADSR envelope → A-131 CV** - **A-131 Out** → mixer / filter / output

This gives you the classic synthesizer note shape: - keyboard or sequencer determines pitch - gate triggers ADSR - ADSR opens the VCA - each note gets a distinct contour

That is the foundation of most melodic patches.

A-130 (linear VCA): best for control voltages and modulation depth

The manual says this is the one you'd **normally use for control voltages**. For melodic work, that makes it especially useful for controlling things like:

- vibrato depth
- filter envelope amount
- tremolo amount
- keyboard tracking amount
- modulation scaling from sequencers or random sources

Because it is linear, it behaves more predictably when scaling CV.

Typical melodic role

Use it to control how much modulation reaches another module: - **LFO → A-130 Audio/CV In** - **envelope or macro control CV → A-130 CV input** - **A-130 Out** → VCO FM input, filter CV input, or another VCA's CV input

This lets modulation appear only on certain notes or only at certain strengths.

Important features from the manual and what they mean musically

1. Two audio inputs per VCA

Each VCA has: - **Audio In 1** - **Audio In 2**

Both are mixed and then amplified together.

Musical uses

This is useful for melodic patches because you can combine: - two oscillators in an interval - oscillator + noise for attack transient - sub oscillator + main oscillator - two different waveforms for richer note tone

Example: - VCO 1 saw → In 1 - VCO 2 pulse tuned a fifth up → In 2 - envelope to CV - output gives one articulated melodic sound with both oscillators under the same amplitude contour

This is a very efficient way to make harmonically richer melodic voices.

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2. Gain control acts like an offset

The **Gain** knob sets overall gain. The manual notes that if gain is above zero, amplification can happen even with no CV present.

Musical implications

This matters a lot in melodic patches:

- With **Gain at 0**, notes only sound when CV opens the VCA
- With **Gain above 0**, some sound may pass all the time, or negative/bi-polar modulation can still be heard

Good uses

- create drones beneath melodies
- let tremolo continue smoothly with a bipolar LFO
- add a constant bed under a sequenced line
- make modulation audible even when the modulating CV swings below 0 V

This is especially useful if you want a melodic part that is partly percussive and partly sustained.

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3. CV response: linear vs exponential

The manual emphasizes the difference:

- **A-130 linear**: amplification changes directly with control voltage
- **A-131 exponential**: more natural loudness behavior for audio

Musical interpretation

For melodic lines: - use **A-131** when you care about how loudness feels to the ear - use **A-130** when you care about accurate scaling of modulation/ control signals

A strong patching strategy is: - **A-130** for shaping modulation - **A-131** for shaping the audible voice

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4. VCA control range

The manual states the effective CV range is: - **0 V = no amplification** - **+5 V = maximum amplification**

Why that matters

Many envelopes, sequencers, and modulation sources in Eurorack exceed 5 V. So in melodic patches: - use the **CV2 attenuator** to tame hot modulation - use the **input attenuators** to avoid distortion - use the **Out** knob for final level balancing

This helps keep your melodic voice clean and controlled.

Melodic patch ideas using these modules

1. Basic subtractive melodic voice

This is the most direct use.

Patch

- VCO pitch controlled by keyboard/sequencer
- VCO audio → A-131 In 1
- ADSR → A-131 CV1 or CV2
- A-131 Out → mixer/output
- Gate from keyboard/sequencer → ADSR gate

Result

A standard melodic synth line with proper note articulation.

Why A-131 here

Its exponential response gives a more musically natural volume contour.

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2. Two-oscillator lead voice

Use the VCA's two inputs to combine oscillators before amplitude shaping.

Patch

- VCO 1 saw → A-131 In 1
- VCO 2 pulse → A-131 In 2
- tune VCO 2:
- unison for thickness
- octave for body
- fifth for harmonic brightness
- ADSR → A-131 CV
- A-131 Out → output

Result

A richer melodic line with one envelope controlling both oscillators.

Musical advantage

The two input attenuators let you balance the interval and waveform mix.

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3. Add attack transient to notes

The second input can also add percussive brightness.

Patch

- VCO → A-131 In 1
- Noise source → A-131 In 2
- ADSR to VCA CV
- set noise input low

Result

Each melodic note gets a sharper attack, useful for: - plucks - brass-like patches - pseudo-piano attacks - more defined sequence articulation

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4. Tremolo on melodic lines

The manual specifically describes amplitude modulation using an LFO.

Patch

- VCO → A-130 In 1 or A-131 In 1
- LFO → CV input
- set **Gain above 0**
- output to mixer

Result

At low LFO rates, you get **tremolo**.

Melodic application

Excellent for: - sustained lead lines - animated pads playing chords/ arpeggios - expressive pulsing on held notes

Best choice

- **A-130** is ideal if you want precise amplitude modulation behavior
- **A-131** can sound more ear-natural as final loudness control

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5. Audio-rate AM for metallic melodic tones

The manual notes that with audio-rate modulation, sidebands appear and interesting timbres emerge.

Patch

- carrier VCO → A-130 In 1
- second VCO or audio-rate LFO → CV input
- set Gain above 0
- output to mixer
- pitch the carrier from your sequence
- optionally pitch the modulator musically too

Result

Complex, clangorous, or bell-like melodic tones.

Musical use

This is great for: - metallic leads - tuned percussion - experimental melodic motifs - evolving harmonics in repeated sequences

The A-130 is especially suitable here because linear response tends to be more predictable for modulation duties.

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6. Voltage-controlled vibrato depth

This is where the A-130 really shines.

Patch

- LFO → A-130 In 1
- envelope or performance CV → A-130 CV input
- A-130 Out → VCO FM input (lightly)
- VCO audio → A-131 for final amplitude shaping

Result

Vibrato amount changes over the life of each note.

Musical examples

- no vibrato at attack, more at sustain
- stronger vibrato on accented notes
- modulation wheel-like expressiveness if a controller provides the CV

This makes melodic lines feel much more alive.

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7. Voltage-controlled filter envelope amount

You can also use the A-130 to scale an envelope before it reaches a filter.

Patch

- ADSR → A-130 In 1
- sequencer accent CV / controller / second envelope → A-130 CV
- A-130 Out → filter cutoff CV input
- VCO audio → filter → A-131 → output

Result

Some notes open the filter more than others.

Musical benefit

This creates: - accents - phrase dynamics - stronger articulation on selected notes - expressive melodic contour beyond simple pitch changes

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8. Keyboard tracking for brighter/louder high notes

The manual specifically includes **keyboard tracking** patches.

Patch concept from the manual

Use keyboard CV to control a VCA so pitch affects amplification.

Example

- VCO audio → VCA 1 → VCA 2
- ADSR controls VCA 1 for normal note articulation
- keyboard pitch CV goes to VCA 2 CV
- adjust VCA 2 gain/CV amount to determine how much louder higher notes become

Result

Higher notes are louder than lower notes.

Musical use

This is useful when: - you want leads to “speak” more in the upper range - you want a keyboard-like dynamic contour across pitch - you want patches that cut through more at the top

The manual also shows the inverse version using a voltage inverter: - lower notes louder than higher notes

That can be great for: - bass-focused sequences - mellow top-end behavior - psychoacoustic balancing of melodic runs

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9. Controlled modulation depth for evolving phrases

The manual’s three-VCA example is especially good for melodic development.

Structure

- **VCA 1**: applies AM to the sound
- **VCA 2**: final volume control
- **VCA 3**: controls modulation depth

Melodic interpretation

You can adapt this concept to any modulation: - vibrato depth - tremolo depth - filter modulation amount - wavetable position movement - FM amount

Result

A phrase can evolve over time: - first notes dry - later notes more animated - chorus stronger than verse - accents push modulation deeper

This is one of the most musically powerful uses of VCAs in a melodic system.

Practical “voice architecture” ideas

Voice architecture 1: classic mono lead

- VCO → filter → A-131
- ADSR → A-131 CV
- sequencer/keyboard pitch → VCO

- gate → ADSR

Use the A-130 to scale: - vibrato depth - filter envelope amount - accent CV

Voice architecture 2: expressive dual-oscillator voice

- VCO 1 → A-131 In 1
- VCO 2 → A-131 In 2
- ADSR → A-131 CV
- keyboard CV also routed through A-130 for keyboard tracking of filter or amplitude

This gives a solid melodic lead with dynamic response across the keyboard.

Voice architecture 3: animated sequence voice

- sequenced VCO → A-131
- ADSR → A-131 CV
- LFO → A-130
- envelope or accent CV → A-130 CV
- A-130 Out → filter cutoff or vibrato FM

This creates repeated melodic patterns that subtly evolve note by note.

Best practices from the manual

Keep levels under control

The manual warns that if the output distorts undesirably: - reduce **In 1** - reduce **In 2**

This is especially important when combining two oscillators or strong modulation signals.

Use Gain carefully with bipolar modulation

If using an LFO that swings negative and positive: - set **Gain > 0**

Otherwise, only the positive half of the modulation may open the VCA, producing chopped or asymmetric behavior.

That can be useful creatively, but if you want smooth tremolo or AM, a little gain offset helps.

Use A-130 and A-131 together, not as alternatives

The most musical takeaway from this manual is that these modules complement each other:

- **A-131** shapes the audible note
- **A-130** shapes the behavior of modulation that makes the note expressive

That combination is ideal for melodic music.

Summary

These Doepfer VCAs are core melodic utility modules.

Use the A-131 for:

- final loudness shaping of notes
- envelope-controlled articulation
- dual-oscillator melodic voices

- plucks, leads, basses, pads

Use the A-130 for:

- scaling CV
- vibrato depth control
- filter modulation amount
- tremolo and AM
- keyboard tracking
- dynamic modulation of melodic phrases

Most musical combined use

A very effective setup is:

1. **VCO(s)** provide pitch and harmonic content
2. **A-130** controls expressive modulation depth
3. **A-131** controls final note loudness

That gives you melodic patches that are not just pitched, but also **phrased, articulated, and dynamically shaped**.
