

Hexinverter – Orbitals

- [Manual PDF](#)
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[Hexinverter Orbitals User Manual PDF](#)

Generating Dense, Hyper-Complex Percussion with Hexinverter Orbitals

As a eurorack musician, **Hexinverter Orbitals** is an outstanding module for driving dense, intricate rhythmic and percussive sequences—especially when aiming for complex polyrhythms and evolving pattern structures. Here's how you can harness the features described in the manual:

1. Dual (or 16-Step) Sequencing

- **Polyrhythms:**
Operate Orbitals as two independent 8-step sequencers. Send each sequencer's **gate output** to trigger different percussion modules (e.g., kick, snare, hats). By setting different sequence **lengths** (e.g., 5 steps for A, 7 steps for B), you create natural polyrhythms as the sequences only align after 35 steps.
 - **Complex Patterns:**
Switch to 16-step mode to program more elaborate percussion patterns. Combine this with sequence length controls to experiment with truncated/extended rhythms (e.g., set A to 11 steps, B to 13).
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2. Advanced Step Modes

- **Random & Pendulum:**

Use **RND (random)** mode for one sequencer for glitchy, evolving percussion, and **PND (pendulum)** mode for the other to bounce between linear and reverse for organic time-feel shifts.

- **Voltage Addressed Stepping:**

Feed unpredictable (LFOs, sample & hold, other random CVs) into the **RST/CV inputs** in “CV” or “CLK” mode to allow the step addressing (and thus, rhythm) to follow complex or modulated patterns.

3. Custom Clocking & Time Signatures

- **External Clocks:**

Use complex, non-standard clocks (Euclidean, clock dividers/multipliers, or hand-programmed rhythms) into each sequencer’s **CLK IN** to generate asymmetrical rhythms and custom time signatures.

- **Internal/External Clock Asymmetry:**

Clock A and B with different sources or rates for shifting polyrhythms, or clock one internally and the other externally for controlled chaos.

4. Gate and CV Programming

- **Gate Length Tuning:**

Use the **GATE knobs** per channel to vary step lengths—ideal for tying gates across steps or creating sudden rolls/bursts.

- **Strategic Gate Steps:**

Set specific steps’ gate switches ON/OFF to carve out intricate rhythms, rests, ghost notes, or fills.

- **Gate Outputs as Modulation:**

Use the sequencer’s gate outs not just for triggers, but to

rhythmically modulate other parameters (VCAs, filters, effect depths) in time with percussion.

5. Sync and Transposition for Evolution

- **SLAVE B>A Switch:**

When you want tightly related, evolving patterns, synchronize Sequencer B's clocking, reset, and run controls to Sequencer A. Allows for tandem evolution or instantly flipping back to independent operation.

- **Transpose Percussion:**

Use the **TRANS A input** to shift the CV output, transposing percussion for melodic/rhythmically shifting hits if using pitch-responsive drum sources.

6. Voltage Range and Bipolarity

- **Voltage Ranges:**

Set jumper output ranges (see [manual p.8](#)) to work perfectly with even the oddest drum/CV modules— $\pm 2.5V$, $\pm 5V$, or unipolar 0–5/10V.

- **Bipolar CV for layered modulation:**

Use the bipolar mode to modulate drum tuning, morphing, or waveshaping per step for extra animated percussion.

Example Patch Ideas

1. **Polyrhythmic Drums:**

2. Seq A: 5-step (kick triggers), Seq B: 7-step (snare/hats)

3. Different clock rates

4. Random mode on Seq B for glitch fills

5. **CV-Modulated Drums:**

6. Output CV from a sequencer to pitch/timbre input of a percussion module
 7. Toggle gate switches so only some hits are accented or modulated
 8. **Fractal/Euclidean Patterns:**
 9. Use clock dividers/multipliers upstream for complex pulse streams
 10. Route sequencers' CLK OUTs into logic modules for even wilder layers
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Tips:

- **Stacked Patterns:** Use additional logic modules, VCA chaining, or envelope retriggers for layering and further densifying rhythms produced by Orbitals.
 - **Manual Performance:** Use the RESET and RUN switches or trigger inputs for real-time fills, breaks, and resets during live performance.
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