2hp — 3 to 1

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Creative Patch Ideas with the 2hp 3:1 Gate Switch

The **2hp 3:1** is a compact, voltage-controllable gate/trigger switch and summer. It can function as both a **selective switch** (routing one of three gates to a destination) and a **gate summer** (outputting triggers for all active channels). Below are some ideas for creative use in your Eurorack system.

1. Dynamic Sequencer Variation

Concept: Use 3:1 to select between multiple gate/trigger sources, creating evolving rhythmic patterns.

How-To: - **Connect three different gate sources** (e.g., from a sequencer like **Intellijel Metropolix**, **Make Noise Tempi**, or **Pamela's New Workout**) to the inputs of 3:1. - Use the **SEL CV** with an LFO, random voltage, or stepped voltage (e.g., from **Mutable Instruments Marbles** or **ALM Busy Circuits Pamela's New Workout**) to automate which input is currently active. - Send the output to an envelope generator or percussion module for shifting rhythmic variations.

2. Fast Drum Fill Generator

Concept: Automatically layer and rearrange multiple drum triggers for fills or rolls.

How-To: - Patch kick, snare, and hat triggers into the three inputs. - Use the **SUM mode** (MODE switch right) to create complex layered patterns—when multiple inputs are "selected," short triggers will be output for each pulse. - Sequence the **SEL CV** input to periodically "open up" the switch for all drums at once, then return to selecting just one or two for fills/ breakdowns.

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3. Polyrhythm Maker

Concept: Fuse multiple clock sources at different time divisions for unique polyrhythms.

How-To: - Send gates from multiple clock dividers (like **4ms Rotating Clock Divider** or **Doepfer A-160**) to the 3:1. - Use the SUM mode; each input adds a trigger to the output. - Send the result to a sequencer clock input, randomizer, or trigger an entire drum voice, generating evolving, non-repetitive patterns.

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4. Performance Gate Routing

Concept: Live-swapping controller inputs for expressive performance.

How-To: - Patch gates/triggers from something like **Make Noise Pressure Points**, a midi-to-gate converter, or manual gate buttons to 3:1. - Use the SEL knob by hand during a performance to instantly reroute which input controls a target (like a VCA, effect trigger, or sample player). - Automate changes for surprise drops or shifts during the set.

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5. Gate-Controlled Effect Switching

Concept: Toggle between modulation sources or "punch in" effects at precise times.

How-To: - Gate/trigger outputs from different modulation sequencers or function generators (e.g., **Maths**, **Zadar**, **Batumi**) to 3:1 inputs. - Output goes to an effect module's gate or trigger input (e.g., a burst generator, delay tap, or reverb freeze). - Use SEL CV to let a sequencer or random source pick which modulation gets through.

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6. Randomized Pattern Generator

Concept: Use random sources to automate selection for organic, never-repeating rhythms.

How-To: - Patch outputs from games of chance/random modules (**Mutable Instruments Turing Machine**, **Wogglebug**) to SEL CV. - Each time a random gate is sent, a different trigger sequence or cross-rhythm is produced.

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7. Expand Envelope/Function Generator Complexity

Concept: Sequence access to multiple envelope shapes for a single destination.

How-To: - Patch different function generator end-of-cycle/gate outputs (or use varied length trigger sources) into 3:1 inputs. - The output can sequence different envelope shapes to a single VCA or filter, providing unique modulation movement tailored by how you control the SEL position.

Useful Module Recommendations

- **Random CV/LFO:** Mutable Instruments Marbles, ALM Pamela's New Workout, Make Noise Maths
- **Clock Divider/Drum Trigger:** 4ms QCD, Doepfer A-160/161, TipTop Trigger Riot
- **Envelope/Function Generators:** Intellijel Quadra, Make Noise Function, Zadar
- **CV Step/Sequencing:** Malekko Voltage Block, Intellijel Metropolix, Doepfer A-155
- **Gate/Trigger Controllers:** Erica Synths Pico Trigger, Mutable Instruments Peaks

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Tips for Advanced Patching

- Use **stackable cables or mults** to share gate sources and create interlocked rhythms.
- Try using **audio-rate signals** in SUM mode for unusual, glitchy effects—be sure to protect sensitive modules!
- Experiment with clocking SEL CV for highly repeatable pattern switches, or with slow/random voltages for more generative compositions.

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