

Molecular Disruptor V 2.4

drolo

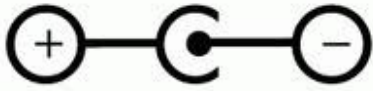


The Molecular Disruptor is a DSP based multi-effect pedal that can be loaded with 8 patches selected from the molecular patches list: <http://www.davidrolo.com/molecular-patches/>
This list is regularly being updated with new patches.

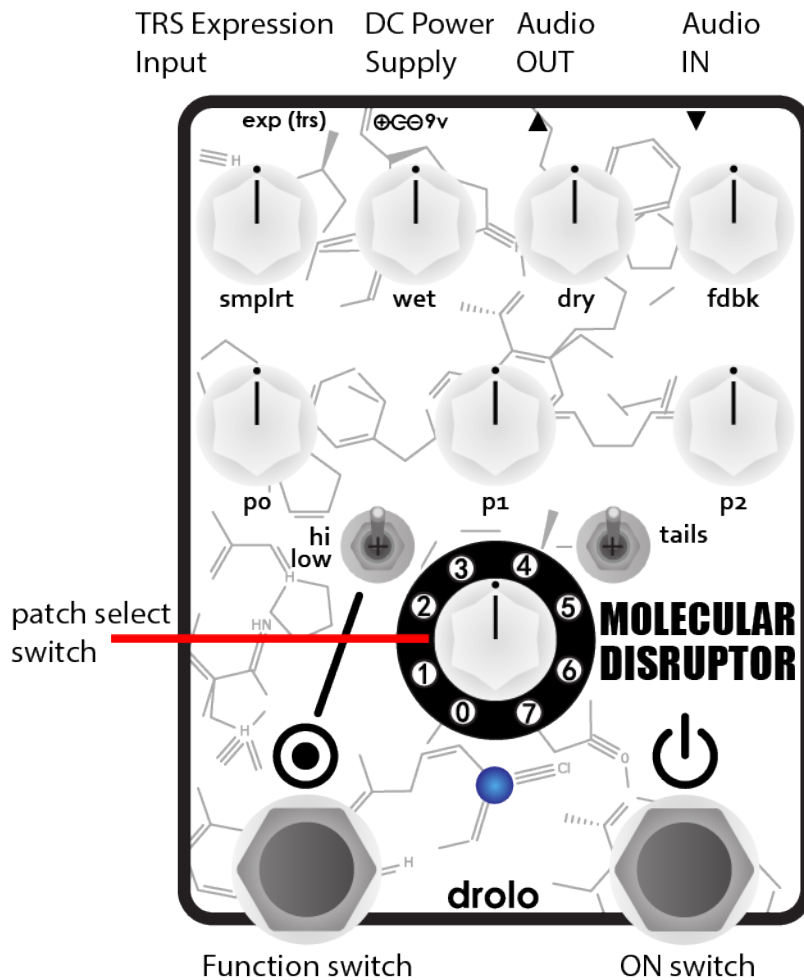
These pedals get programmed after the purchase and the set of patches cannot be changed by the end user (unless you know how to write code and program chips yourself). As of V2.4 you can however purchase additional sets of patches ([Molecular Modules](#)). You can buy these either when buying a Disruptor or separately if you own a Disruptor (V2.4 or above)

Connecting and powering:

The power supply needs to be 9V/100mA center negative like the common BOSS power supplies:



Make sure the polarity of your power supply is correct or it will damage the pedal. Do NOT run at higher voltages. As the pedal uses a digital processor operating at high frequencies, you may hear some high pitched noise if you use it together on the same power supply with other pedals (daisy chained) even when it is bypassed. The noise can bleed through the power supply into the other pedal's signal. This is normal for such devices. It might not be the case in your particular setup but if you notice that, I would suggest using an isolated power supply.



- bypass switch:** If you give it a short tap (<0.3sec) it acts in latching mode.
If you press it for more than a second the bypass indicator led will start flashing and you are in momentary mode.
- tails:** Defines the bypass mode.
Up : Buffered bypass that leaves the output of the effect passing through when the pedal is bypassed, allowing delays to trail off etc. Note that this will mean that any patch that generates noise may be audible when pedal is bypassed. Use the Down position in those cases.
Down : Relay, true bypass, no delay tails.
- function switch:** Depending on the **hi/lo switch** setting it will set the p0 value to its minimum or maximum when pressed. In some patches it can be used to tap a tempo or latch a state (hold).
- hi/lo:** Defines how the function switch will work.
hi: maximizes p0 value when pressed.
low: minimizes p0 value when pressed.
- patch selector:** Select one of the 8 loaded patches (Note: When you change to a different patch, any sample that was held or looped in the previous patch will be deleted).
- p0, p1, p3:** Each of these pots controls a parameter whose function will vary depending on the selected patch.
- fdbk:** Usually serves as feedback (for example for delay repeats), but depending on the patch it can also be used for other functions or have no function .
- wet/dry:** Control the level of the wet and dry signals. Unity gain around mid position. (Note: for certain patches, due to a comb filter effect when mixing dry and wet signals that are too similar you might hear some strange phasing. These patches were usually meant to be used wet only but you are of course free to mix in some dry if you like the results).
- smplr:** Controls the sample rate at which the DSP chip will run. It goes from around 16kHz to 70kHz
Most patches are optimized to run around 30kHz. Increasing the sample rate will have different effects depending on the chosen patch but as a general guide:
- Audio quality increases as you increase smplr, sample size (delay time) decreases.
- The range of filters goes up as you increase smplr.

exp input:

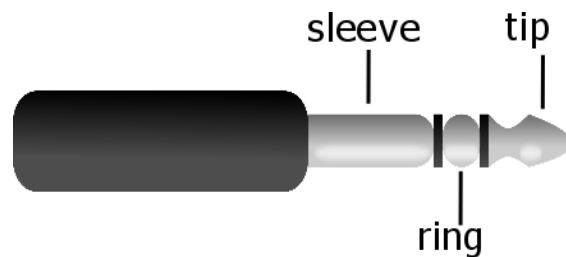
Can be used to externally control p1. When an expression pedal is connected, the p1 pot can be used to define the max setting of the expression pedal.

Most commercially available expression pedals using a TRS plug should work. The value is not really critical, although I would not go lower than 10k.

Some examples are the Moog EP-2, Roland EV-5, and M-Audio EX-P.

You need to use **TRS (Stereo)** plugs and cables. **NO MONO PLUGS OR CABLES!** These will short out the voltage regulators inside the pedal and damage it.

Here is how such a TRS plug looks like.



The exp jack is connected to the pedal like this:

sleeve : ground

ring: 3.3V supply voltage

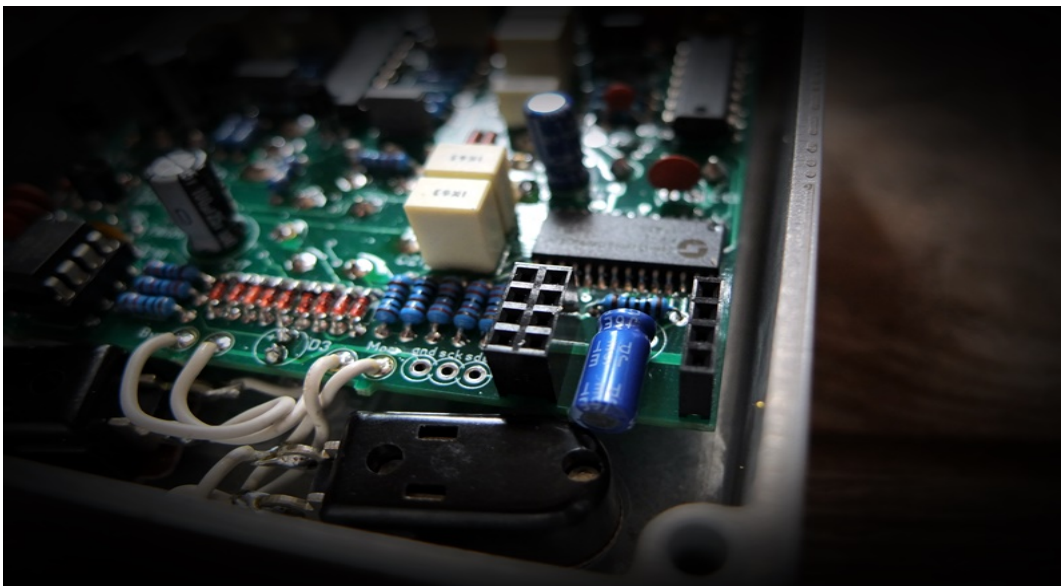
tip: controlling (varying) pin

If you really know what you are doing you can actually use a control voltage instead of a resistance based controller. But you need to consider the connections and never exceed 3.3V. If you do you will damage the pedal. Use a TRS plug. No Mono plug. TRS, not MONO :)

If you have any doubt when deciding what to connect to the expression input please send me an email and I will verify that everything is safe.

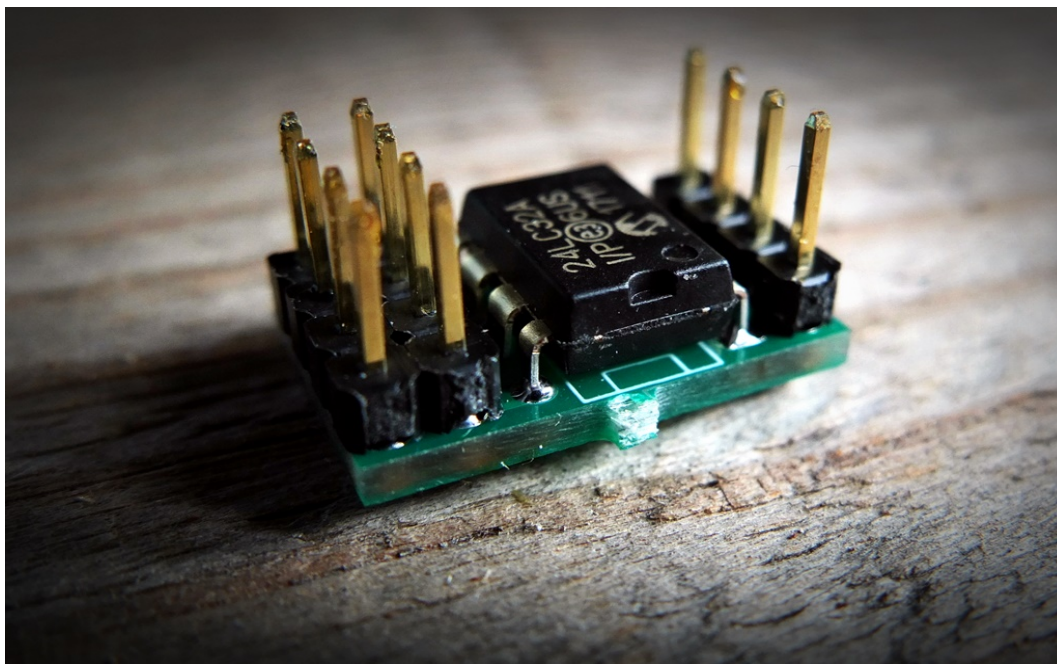
Replacing a set of patches:

Before you swap a module, you need to unplug the power supply from the pedal.



Inside your pedal you will find the socket for the molecular module on the bottom right side of the circuit board:

Insert the module, orientating it according to the single/double rows of pins:



Although both the socket and the modules are relatively sturdy, they're not really made for constant swapping so be reasonable ;-)

Thanks !

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