

nonlinearcircuits

DELAY NO MORE 3 build & BOM

This module contains three PT2399 delay chips that feed into each other to create a loop.

The delay time for each stage is individually CV controlled and each stage has feedback controls to itself and the previous stage.

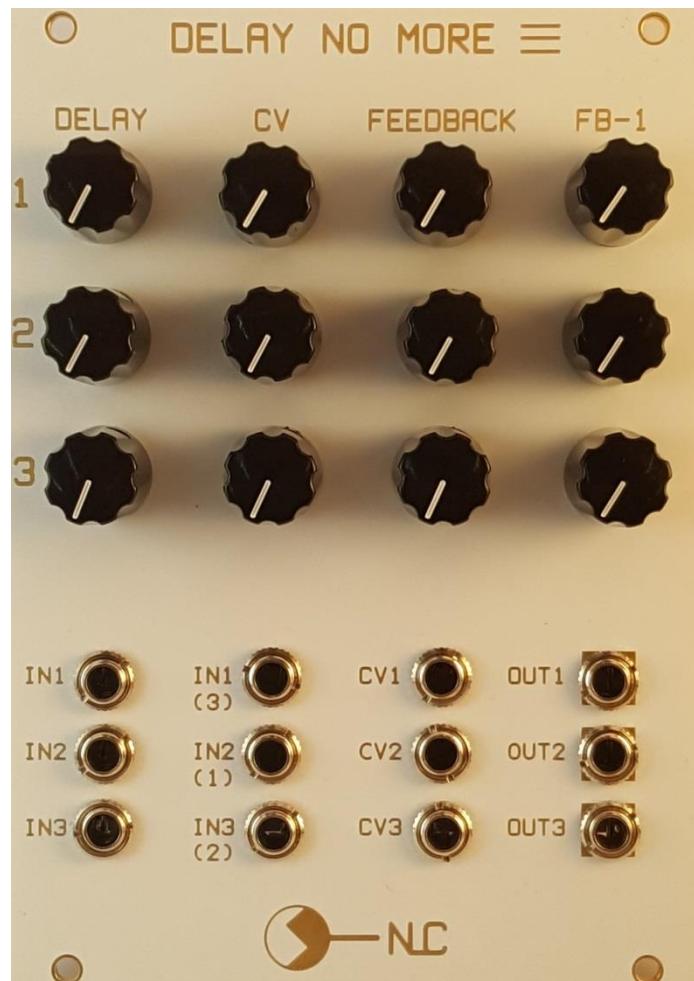
Each delay stage can be isolated and used on its own so the module can be used as a triple delay or a 3 stage delay.....kind of:

If you are familiar with the original DelayNoMore, you will know it is a crap delay but an excellent noise module, this one is designed to be much the same. The big differences being 3 delay stages instead of 2, CV control over all 3 stages instead of 1 and, as mentioned, the stages can be used individually.

To use, the input signal(s) can be patched into the 1-3 inputs and the three outputs can be used to get different signals. The 2nd row of inputs use the jack switches to forward the output of each stage to the input of the next, so if you wish to use the delays individually, use these inputs to break the loop.

There are pads on the PCB to place resistors in parallel with the LDRs in the vactrols, this is to tame the delay times somewhat. It is up to the builder to decide how lame or how out of control they want this module to be.

Please note the pots go on the side of the PCB that has the pot symbol screenprinted, this is different to older NLC PCBS.



BOM – The Tayda part numbers are given as examples, feel free to buy from your favorite retailer if you prefer.

VALUE	QUANTITY	DETAILS
47pF	3	0805
1n or 102	3	0805
10nF or 103	3	0805
47n or 473	6	0805
100nF or 104	16	0805
10uF	14	0805 25V or higher voltage rating
1k	12	0805
10k	12	0805
47k	15	0805
100k	12	0805
RL	3	0805 see notes
\$ (optional resistors)	3	0805 see notes
PT2399	3	Soic Tayda: A-1526
TL072 or TL082	5	Soic Tayda: A-1139
LM78L05	3	soic Tayda: A-629
Single vactrol	3	See notes
100k (B) pot	12	Tayda: A-1848
Eurorack 10 pin power connector	1	Tayda: A-198 cut to size
Schottky, power rectifier or 10R, optional - for reverse voltage protection...or not	2	SMD SEE NOTES #1. dot on PCB indicates CATHODE (stripe on component). My current fave is BAT54GWX, Mouser: 841-BAT54GWX
3.5MM SOCKET Kobiconn style	12	Tayda: A-865 or Thonkiconn Jacks (PJ301M-12) from Thonk, Synthcube or Modular Addict

Additional notes:

1., Schottky (best option) or standard power rectifier diode 50-600v 1A or more, or use a resettable fuse or just a 10R. Examples: BAT54GWX, PMEG2005EGWX, AEC-Q101, 20v, SOD-123, PMEG2005EH DIODE, SCHOTTKY, 0.5A, 20V, 1N400x or S1JL or similar.

2. The chips, resistors, caps are cheapest from Tayda. Schottky diodes & 10uF 25V 0805 caps from Mouser/E14/Farnell/etc.

3. Join the Nonlinearcircuits Builders Guild on FB:
<https://www.facebook.com/groups/174583056349286/> and ask questions there if you have any. If you prefer not to FB then email is fine.

4. RL: These are the resistors for driving the LEDs in the vactrols. If you are using commercial vactrols then you should use the recommended resistors, probably 470R or 1k. If you are DIY-ing your vactrols and using your own LEDs, I suggest choosing resistor values lower than you normally would for the LEDs.

For example, I use red LEDs in my DIY vactrols with RL = 1k. If I installed these same LEDs on the panel of some module, I would use 4k7 resistors for RL so they are not too bright.

5. vactrols: My suggestion is buy a bag of a hundred GL5516 LDRs on ebay for \$4 and make your own with red/green/orange/yellow LEDs and heatshrink/black tape/3D-printed cases or FIMO. Otherwise buy vactrols from Synthcube, Modular Addict or Thonk.

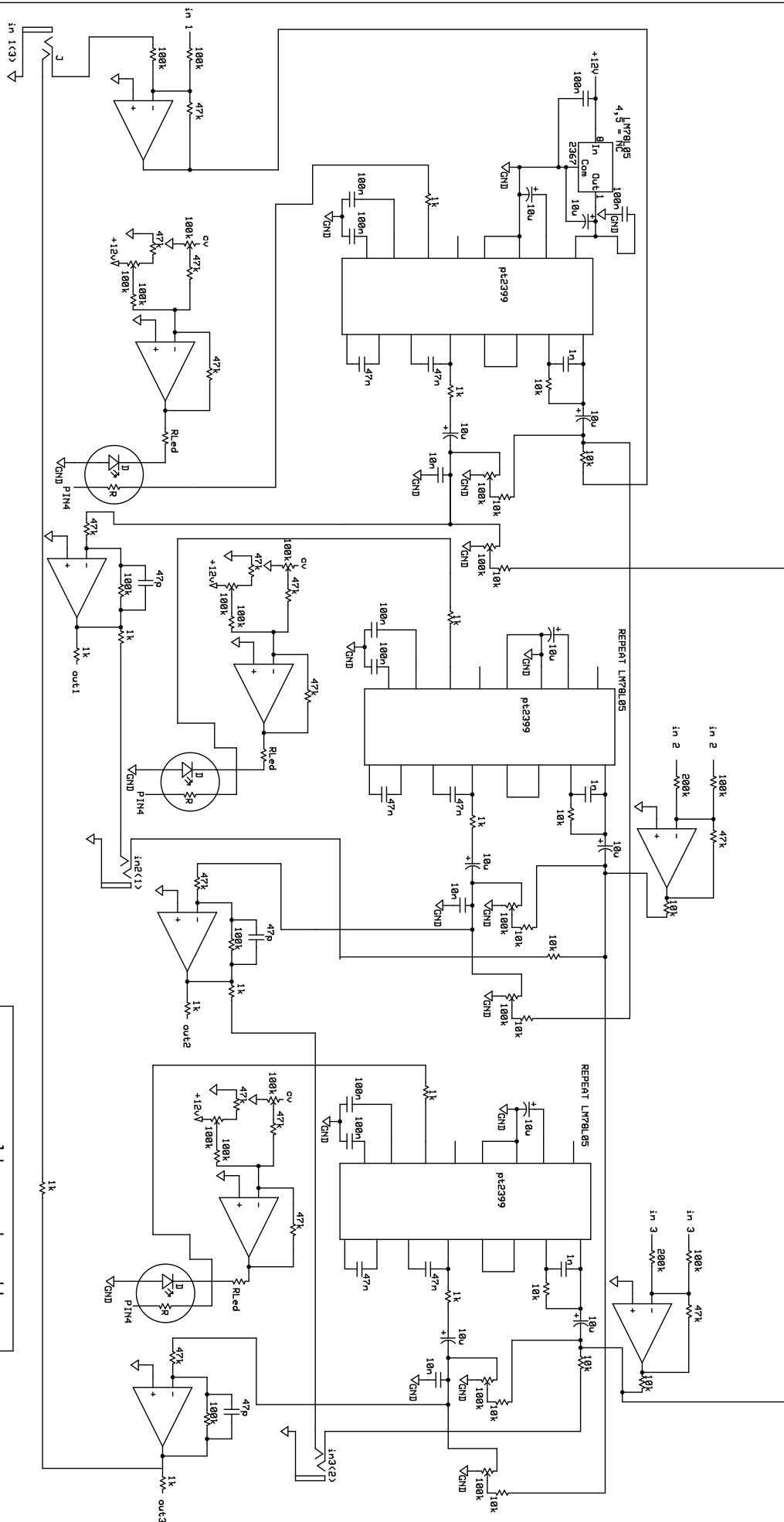
6. \$: These three sets of pads are for installing 0805 resistors to limit the range of the three vactrols controlling the delay times.

Normally the PT2399 wants to see less than 50kΩ on pin6. If using DIY vactrols and GL5516 LDRs (as suggested above), you will deliver up to 500kΩ on pin6. This makes the chip output all sorts of random k'chunks and zipper noises, I love it and have nothing installed on the \$ pads.

Commercial vactrols may have an off resistance of 1MΩ, or even much higher. I have measured over 20MΩ on some types. This may or may not be interesting to you, possibly the chips will stall for a minute or several, then deliver a few stuttering shhgggrerker-whizzit noises then go quiet again.

If you have installed a high off-resistance vactrol and want to keep the action reasonably steady then install resistors on the \$ pads. 470k to 1MΩ is a good choice.

7. The screenprint for the LM78L05 does not indicate pin 1 on the PCB, not sure what happened there. Anyway make sure the label on the IC lines up with the label on the PCB, or just check the photos in this build guide.



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andrewf	Rev 1.0
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