nonlinearcircuits

SPLOSH build & BOM

This is 8 different rectifiers processing 4 input signals. It is happy to work with audio or CV or both at the same time. It has 16 outputs that will deliver 16 different signals made up of components of the 4 incoming signals.
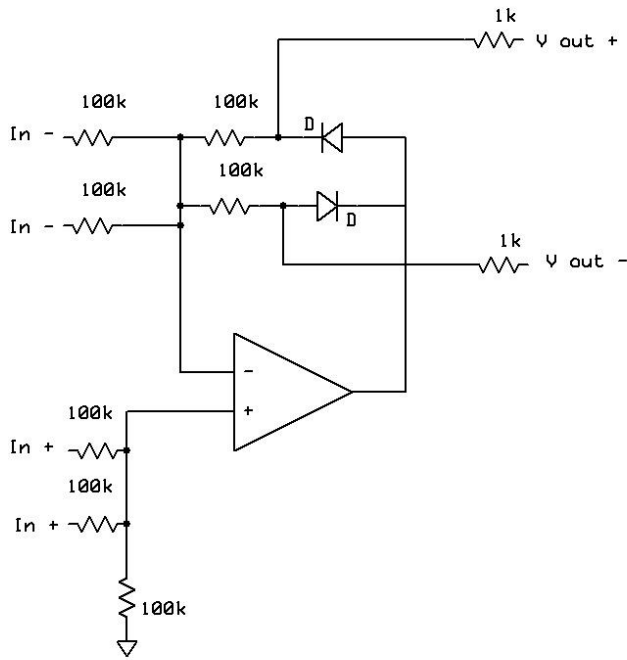
To put it simply, it makes a gloopy mess of the incoming signals and smears it all over your patch. If this module name and the food names make no sense look up some sploshing videos on youtube. That is pretty much what this module will do to your CV and audio signals with corresponding amounts of pleasure for the receiver.

BOM

VALUE	QUANTITY	DETAILS
10µF	3	0805 25V rating or higher Mouser No: 81-GRM21BR61E106KA3L (or similar)
1k	16	0805
10k	16	0805 see notes #3
100k	60	0805
LL4148 diodes	16	size: SOD-80, mini MELF, LL34, DO-213AA …………they are all same
TL072 or TL082	4	SOIC Tayda: A-1136
3mm LED	16	should be superbright see notes #3
Eurorack 10 pin power connector	1	Tayda: A-198
1N400x or S1JL or similar, optional – for reverse voltage protection	2	SMD, standard power diode 200-600V 1A, dot on PCB indicates CATHODE (stripe on component) SEE NOTES #2
3.5MM SOCKET Kobiconn style	20	Tayda: A-865 or preferably get Thonkiconn Jacks (PJ301M-12) from Thonk or Modular Addict

Additional notes:

1. The prices for these 10uF 0805 capacitors drops to approx. 10c each when buying more than 10….and you should always get plenty of spares, it is easy to drop and lose smd parts.

2. S1JL Power diodes are for Reverse voltage protection – Mouser Part No: 821-S1JL. Any similar rectifier with at least 1A rating should be okay, such as 1N4001, 1N4002, 1N4004. Get these sizes; SOD-123 or sub-SMA (DO-214 is a bit too big, so avoid)

3. The resistors marked 10k are for driving the LEDs. You can adjust these to a higher value if your LEDs are too bright, but do not go lower than 10k. If your LEDs are not bright enough, get different 3mm LEDs.

4. The resistors and op amps are cheapest from Tayda. Probably get the caps and diodes from Mouser.

5. 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.

100k   100k

In − ⋀⋀⋀   ⋀⋀⋀   D ◁   V out +

100k

In − ⋀⋀⋀   ⋀⋀⋀   ▷ D

1k

V out −

100k

In + ⋀⋀⋀

100k

In + ⋀⋀⋀

100k

$$V_{out+} = V_{in+} - V_{in-} \ \text{if} > 0, otherwise \ 0$$

$$V_{out-} = V_{in+} - V_{in-} \ \text{if} < 0, otherwise \ 0$$

Ignoring diode voltage drop

Splosh is pretty much this schematic repeated 16 times. Looking at the panel, the output labels indicate how the input signals are combined.

C = custard

T = treacle

N = natto

B = batter

As an example, looking at the 1st output; CT/NB+ means C & T are fed to the + input, N & B are fed to the − input and the + output is fed to the jack.

The + outputs are generally above 0V and the − outputs are mostly below 0V, tho not always.

The LEDs are just hanging off the diode/100k nodes, the ones on the − outputs are reversed biased. This is why the LED resistors should be 10k+.

LET'S SPLOSH

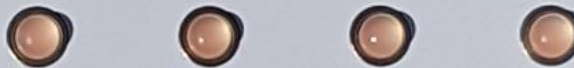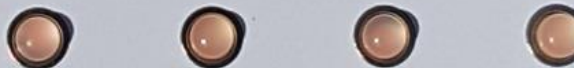## CUSTARD

CT/NB+ CT/NB− CN/TB+ CN/TB−

TREACLE

CB/TN+ CB/TN− CTN/B+ CTN/B−

NATTO

CTB/N+ CTB/N− CNB/T+ CNB/T−

BATTER

TNB/C+ TNB/C− CTNB+ CTNB−

NLC

ALL-2Y126112

13/24− 1k 1k 13/24+ 12/34− 1k 12/34+ in1
10K 100K 100K 100k 100k 100K 100K 100k
062C M2705 10K 10K 100K 100K
123/4− 123/4+ 14/23− 14/23+ in2
100K 100K 100K 100K
X 1k 100k X 1k 100k X
1k 1k 1k 1k
10K 10K 10K 10K
134/2− 134/2 124/3− 124/3+ in3
10K 100K 100K 10K 100K 100K 100K 100K
X X X X
062C M2705
10u 10u 10u 10u
1234− 100k 1234+ 234/1− 234/1+ in4
1k 100k 1k 100k
X X X X
RED
10K 10K 10K 10K

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