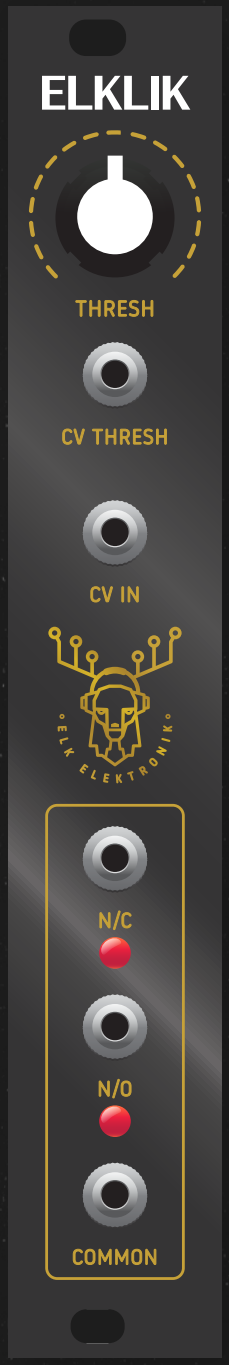
ELKLIK

User Manual



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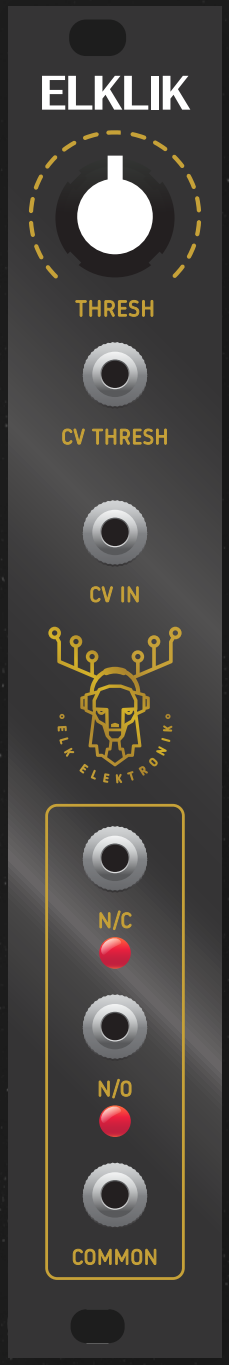
ELKLIK provides electrically isolated relay connections with Common, Normally Open and Normally Closed contacts with a built-in comparator to activate the relay with incoming control voltages.



Threshold knob - Sets a fixed DC threshold voltage between -5V and +5V

CV Threshold - External CV signal as the Threshold. The threshold knob has no function when CV Thresh is connected

CV In - External CV input is compared with the Threshold (either built-in DC or external CV Threshold)

Relay Output - The 3 relay terminals are electrically separated from the control circuit.

These terminals act like a switch with common, normally closed (N/C) and normally open (N/O) contacts.

The corresponding LED is lit when the contact is connected to common.

No voltages are generated by the module at the relay terminals. You will get out what you put in!

SWITCHING EURORACK SIGNALS

Use the standard 3.5mm relay contact connections to switch any Eurorack signal. Try applying an LFO to the common and routing it to 2 different destinations via the normally closed/open contacts. When you apply a signal at CV In, the contacts will be switched whenever the threshold is passed.
Or bring 2 different sequences into the normally closed/open contacts and take the common as an output to your tone generator while ELKLIK alternates between the two sequences.

COMPLEX PATTERNS

Try cascading several ELKLIK modules for complex switching arrangements. You can try different combinations of routing common, normally open/closed to different contacts on each module. Send the same CV control for unison operation, or provide different control signals to each module for super complex patterns!

INTERFACING WITH EXTERNAL DEVICES

Take your ideas out of the box and use the included 3.5mm jack to screw terminal adapters to apply a voltage to one of the relay contacts. Then connect a motor, light, solenoid … you decide… and sync it up with your Eurorack by sending a control signal to CV In.

SOURCE SIGNALS

ELKLIK's built in comparator is key to having maximum control of the relay output. Whenever the Threshold is passed, a change of state is triggered on the relay. Experiment sending periodic waveforms for predictable patterns, noise for random triggering, or a DC voltage to force the relay into a fixed state.

See the Theory of Operation on page 4 for examples of how the comparator responds to incoming signals.

USE ELKLIK AS A CLOCK TRANSLATOR

Sync gear with different voltages using ELKLIK. Set up your CV In to produce a 50/50 duty cycle at the relay contacts.
Connect a DC voltage compatible with the receiving equipment to the common terminal (for example +5V). When ELKLIK is triggered, an alternating +5V signal will be produced on the normally open/closed contacts. Take the output from the other contact for an inverted clock.

FEATURES

- Easily synchronise and control external electronics from Eurorack signals
- Integrated comparator for triggering the relay via a threshold
- Plug and play with Eurorack 3.5mm jacks or use included adapters to switch electronics outside a Eurorack system
- Generate complex patterns with the CV Threshold Input

TECHNICAL SPECIFICATIONS

Module Width:	4HP
Module Depth:	32mm
Threshold Range:	-5V - +5V
Power Supply:	10 Pin +-12V Eurorack Standard
Power Consumption:	50mA @ +12V, 6mA @-12V
Continuous relay load:	1.2A
Maximum relay contact voltage:	24V

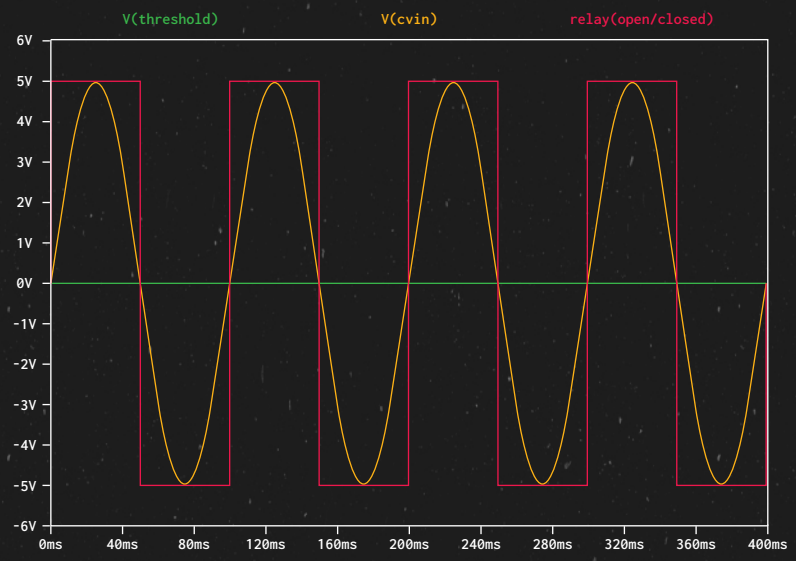
Note: Maximum power consumption is drawn when the N/O contact is closed (N/O LED lit). DO NOT exceed the rated continuous relay load. Overcurrent protection will activate if the continuous relay load is exceeded.

THEORY OF OPERATION

In this example, the Threshold (green) is set to 0V (Threshold knob in the middle).

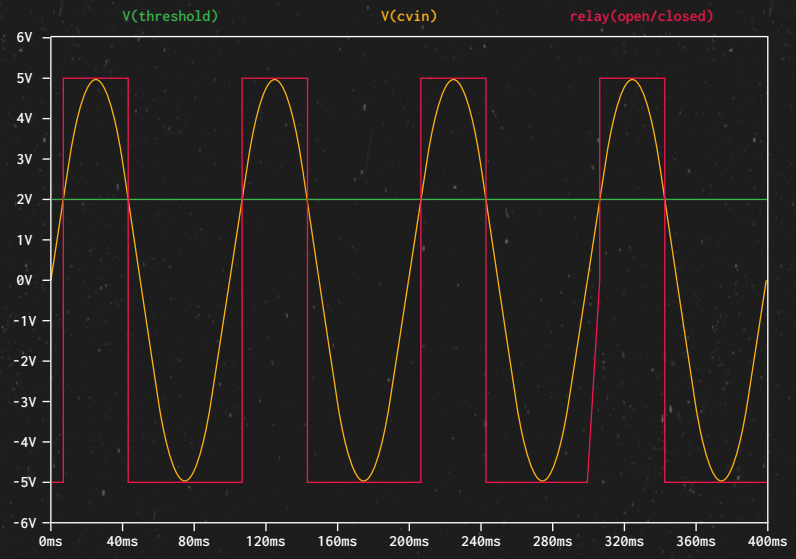
Applying a sine wave to the CV In (yellow) generates a trigger to the relay whenever the threshold is crossed.

In this case, with Threshold at 0V, a 50/50 Duty Cycle is produced at the relay (red) contacts.

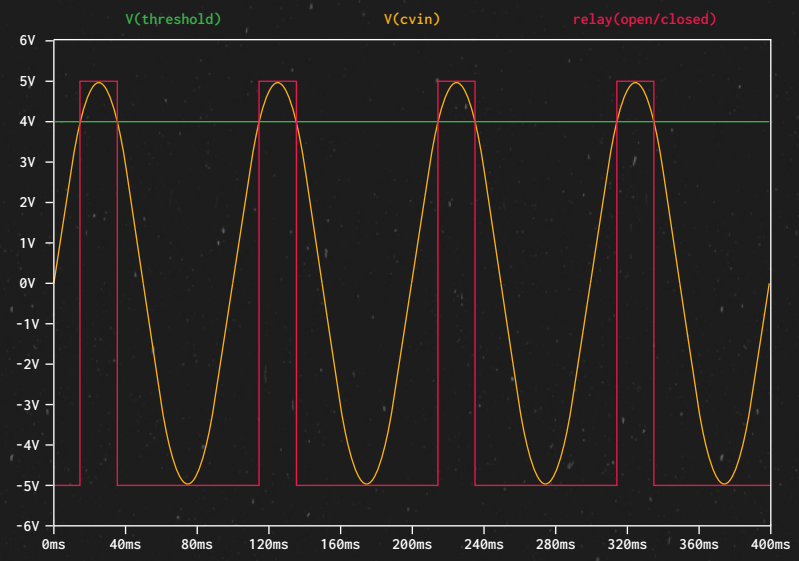


When we increase the Threshold voltage to 2V, we start to see the pulse width of the relay output shifting.

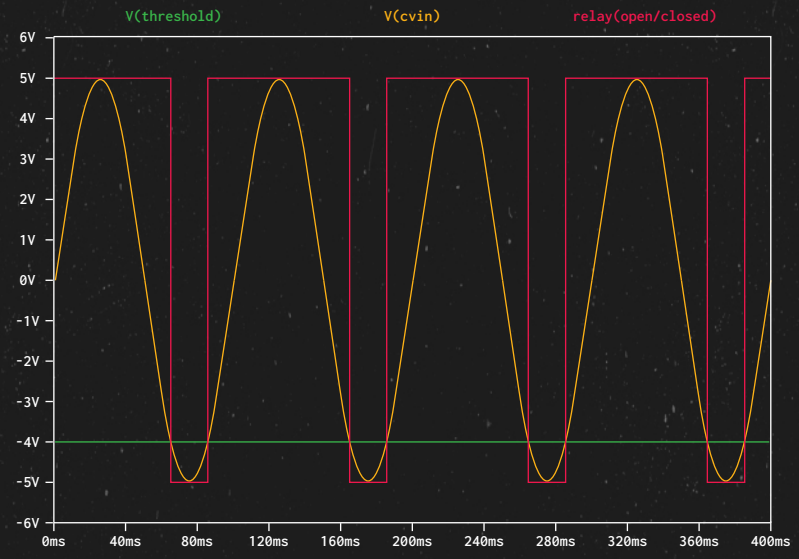
The low pulse becomes longer than the high pulse as the proportion of the sine wave exceeding the threshold changes.



Increasing the Threshold voltage to 4V has a very visible impact on the pulse width of the output.



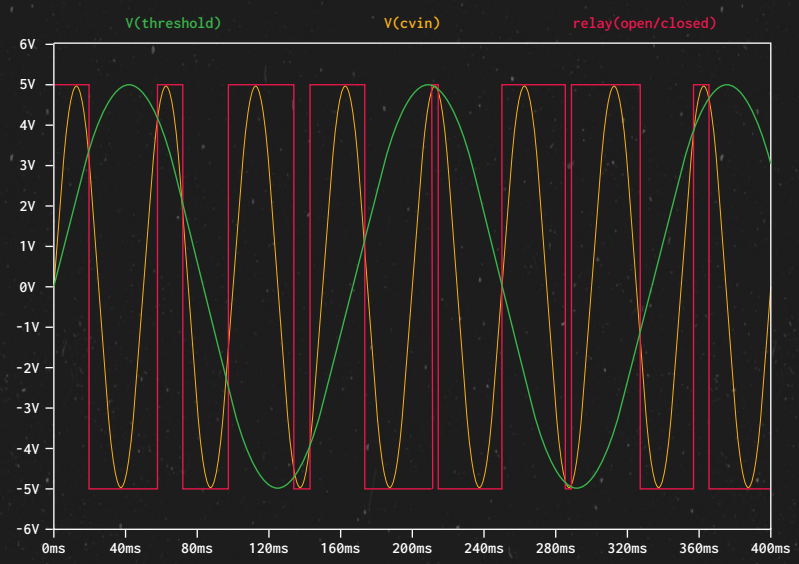
Similarly if we apply a Threshold voltage of -4V we get the inverted relationship of what we saw in the last example.



More complex output patterns can be achieved by replacing the fixed DC Threshold with an external CV Threshold.

In this case we have plugged a lower frequency sine wave into the CV Threshold, resulting in an interesting pattern at the output.

Output transitions occur each time the two incoming waves intersect.



ELKLIK 2021
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