

BMC071. 4HP Dual Latch

If you have any questions, or need help trouble shooting, please e-mail
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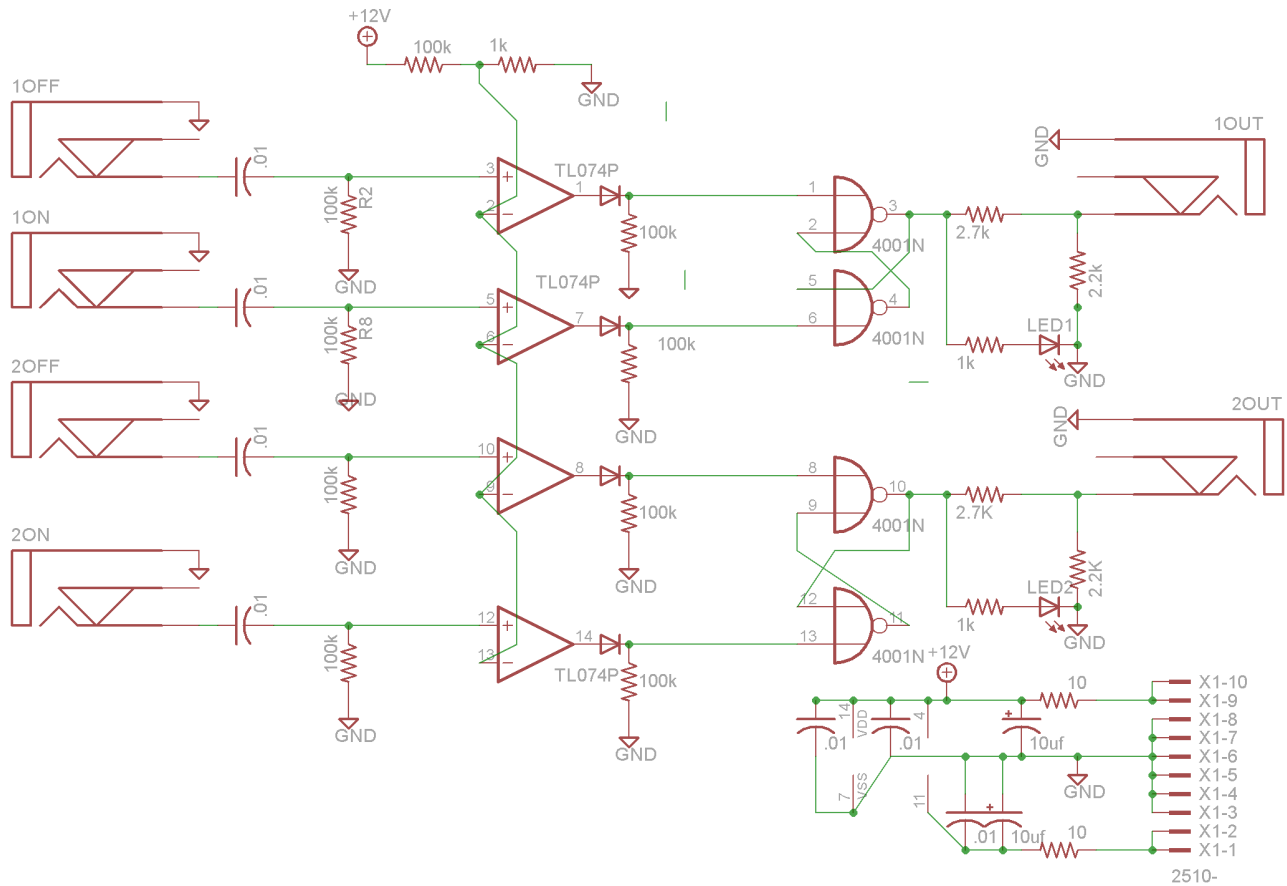
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I. What it Does

This module is made of two SR type latches. Each has a Set input which turns the output on and Reset input that turns the output off. Gates, triggers, square or saw waves can be used as inputs. The outputs are +5V gate signals.

II. Schematic



Above is the schematic for this module. Each input jack connects to a .01uF capacitor and then a 100K resistor to ground which together reduce the input signal to single short pulse when the input goes high. Using short pulses helps prevent the likelihood of both Set and Reset being active at once.

These pulses are then input to a comparator with a threshold of .12V. The output of the comparators are connected to the inputs of the 4001 NOR chip through polarity protection diodes and 100K pull down resistors.

The NOR gates organized in the standard SR configuration so that only the first Set or Reset pulse effects the circuit and further pulses are ignored. The output of each latch connects to an LED through a 1K resistor and to the output jack through a 2.7K/2.2K resistor pair forming a voltage divider.

At the bottom are the power connections. A 10 ohm resistor and 10 uF capacitor form a low pass filter and additional .01uF capacitors are present at the power pin for additional high frequency filtering.

III Construction

A.PARTS LIST

SEMICONDUCTORS

Name/Value	QTY	Notes
TL074	1	14 pin DIP package
CD4001	1	14 pin DIP package
1N4148	4	Or other small signal diode
LED	2	3mm

RESISTORS

Name/Value	QTY	Notes
10 ohms	2	All resistors 1/4W metal film except potentiometers
1K	3	
2.2K	2	
2.7K	2	
100K	9	

CAPACITORS

Name/Value	QTY	Notes
.1uf	7	cheap ceramic disc. Value not critical.
10uf	2	Electrolytic, 16V or higher rating.

OTHER

Name/Value	QTY	Notes
14 pin DIP socket	2	
Power connecter	1	Right angle 2x5 2.54mm, like this .
Jacks	6	PCB is designed around these jacks: PJ-323M

B. THE BOARD

The PCB is 84mm x 36mm. The jacks are spaced 14mm apart (.55 inch). Below are images of the PCB with and without traces present and a photograph of a completed module. The image of the PCB with traces does not show connections to ground.

