



The Arithmetic Logic Unit (ALU) is a multi-purpose utility module which can perform 8 different mathematical operations on audio or CV.

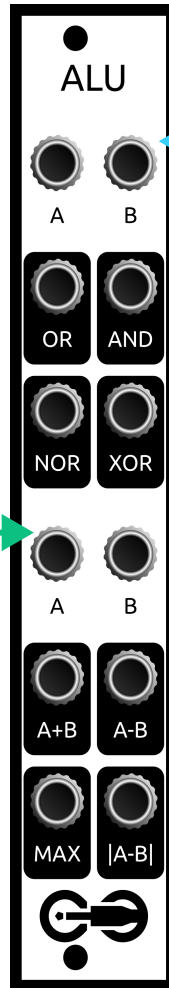
It has two totally independent sections: a logic section which primarily operates on binary signals like gates and triggers, and an arithmetic section that is designed to work on analog control voltages. You can also pass audio through either section to achieve different flavors of distortion.

Arithmetic Section

Performs 4 different arithmetic functions on a pair of analog inputs. The given operation, like addition or subtraction, is just applied to the voltages of the two inputs. So, for example, if A is 3V and B is 5V, $A+B$ will output 8V and $A-B$ will output -2V.

Both inputs can be positive or negative. The outputs can cover the full rail-to-rail range (-12V to +12V) but the inputs should not touch the rails ($\pm 11V$ is fine).

Both inputs are normalled to 0V, so you can use the module with just one input. E.g., put a signal into A and take the result out of $|A-B|$ to just take the absolute value of a signal, or go into B and out of A-B to invert a signal.



Logic Section

Performs 4 logical functions on two identical inputs, **A** and **B**. The inputs are normalled low, pulled low, and hysteresis thresholded. They accept CV or audio inputs. Anything above about 1.4V is considered logic HIGH and anything 0V or less is logic LOW. The outputs will be either 5V or 0V.

		Input A		
		HIGH	LOW	
Input B	HIGH	HIGH	HIGH	Output
	LOW	HIGH	LOW	

		Input A		
		HIGH	LOW	
Input B	HIGH	HIGH	LOW	Output
	LOW	LOW	LOW	

		Input A		
		HIGH	LOW	
Input B	HIGH	LOW	LOW	Output
	LOW	LOW	HIGH	

		Input A		
		HIGH	LOW	
Input B	HIGH	LOW	HIGH	Output
	LOW	HIGH	LOW	