

What it is:

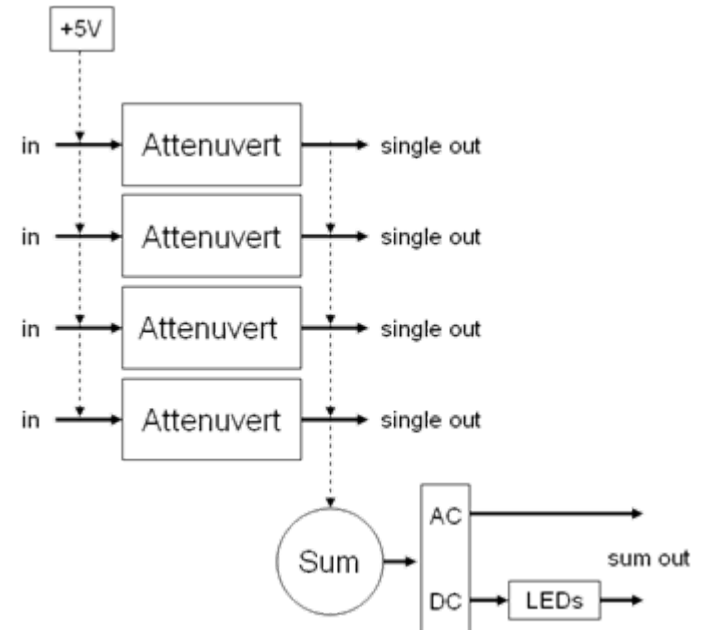
The mh01 - Attenuverting Mixer is not just a mixer, but a multifunctional module. You may use it to attenuate and/or invert signals, or as a mixer for control voltages or audio signals, or simply as a -5V to +5V voltage source - or even several of these things at the same time!

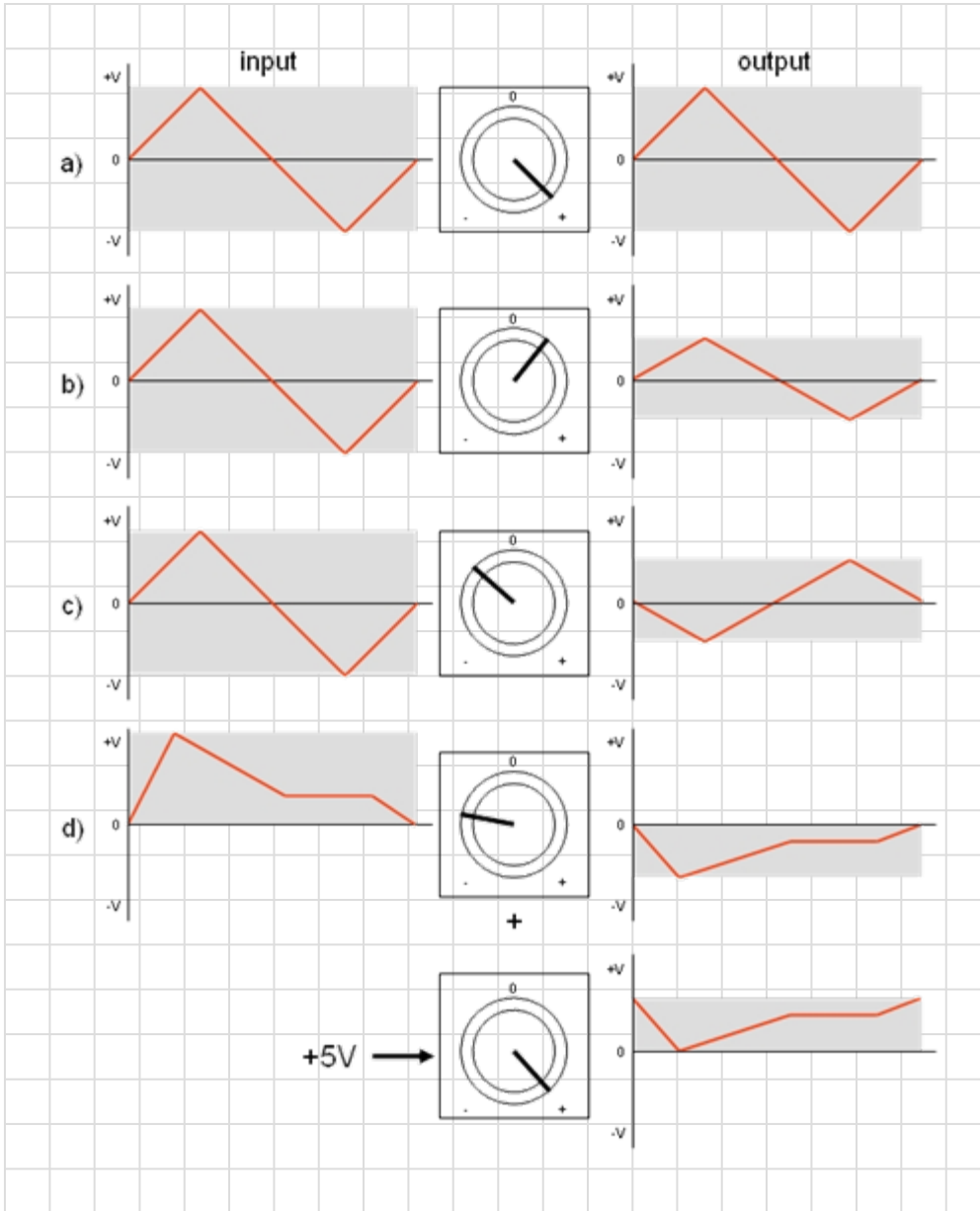
Each of its channels consists of an input (normalled to approx. +5V), an attenuverter (which allows polarization and attenuation at the same time), and a single output (normalled to the summing stage).

The summing stage provides a mode switch, two indicating LEDs, and the summed output, of course!

The channels are DC-coupled, but the summing stage can be switched from DC-coupled (for CVs) to AC-coupled (for audio). In DC mode, the LEDs indicate the positive and negative excursions of the signal. In AC mode, the LEDs remain off, and any offset that is present gets removed.

Block diagram:





Usage examples:

When the attenuverter is turned fully clockwise, you will get near-unity gain (figure a). An attenuverter in the center position will give you zero gain. From the center to the fully clockwise position, the attenuverter attenuates the signal (figure b). From the center position to the fully counter-clockwise position, it will attenuate AND invert the signal (figure c).

Now, consider feeding one channel with an envelope. Attenuvert it, and the control voltage will be inverted, thus, only negative. You can use a second channel to add offset. You would then get an inverted envelope, but now it is positive (figure d)!

Remember, once you patch the single output of a channel, that particular channel will be disconnected from the summing stage. So you could use, for example, two channels for mixing or processing signals with the summing stage, and the spare channels could still be used for attenuation, or as voltage sources.

Constraints:

This module has been designed principally for control voltage processing. Therefore, it cannot give you 100% unity gain. For this reason, it is not recommended for use with 1V/oct keyboard voltages. However, some channels might occasionally output 100% unity gain.

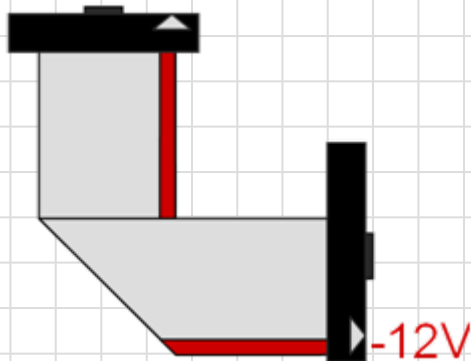
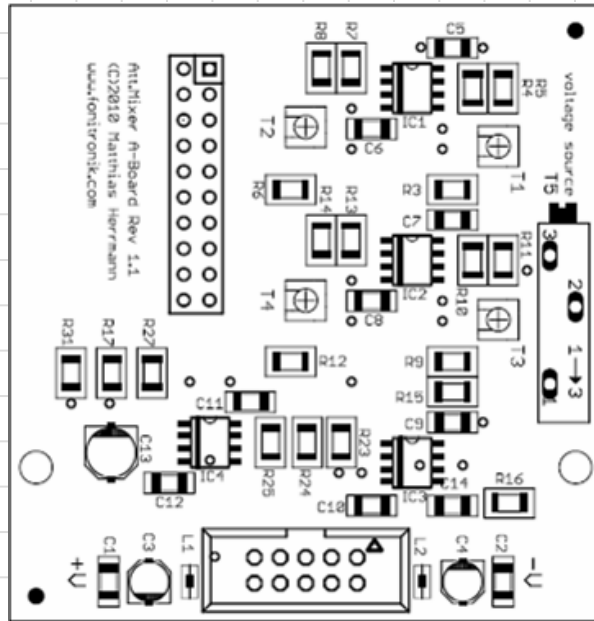
Technical specifications:

3U, 12HP eurorack format

Depth 1.2in/30mm

Supply voltage -12V/+12V (it will work from -5V/+5V up to -15V/+15V)

Current draw average (idle 10-15mA, working up to 20-25mA)



Service notes:

The blue precision trimmer T5 sets the voltage normalled to the inputs. It is set to approx. 5V, however you could change this here. Nevertheless, I recommend the 5V setting, since higher voltage may result in permanently lit LEDs.

Do not touch trimmers T1 – T4. They set the zero attenuation point to the attenuverting potentiometers' center position. They are properly set when you receive your module.

Connect to the Doepfer Buss

The module comes with a power connector ribbon cable installed. It follows the Doepfer standard (red wire = -12V). The board is additionally labeled with '+V' and '-V' to indicate the proper polarity of the connector.

Disclaimer:

If the ribbon cable is connected backwards to the power buss, the module will be destroyed. I cannot honor any warranties in such a case.

So be careful, and triple check the connection you've made.

Thank you for choosing this module. Have fun.

Regards,
Matthias Herrmann

fonitronik * Am Hinkelhaus 31 * 65207 Wiesbaden * Germany