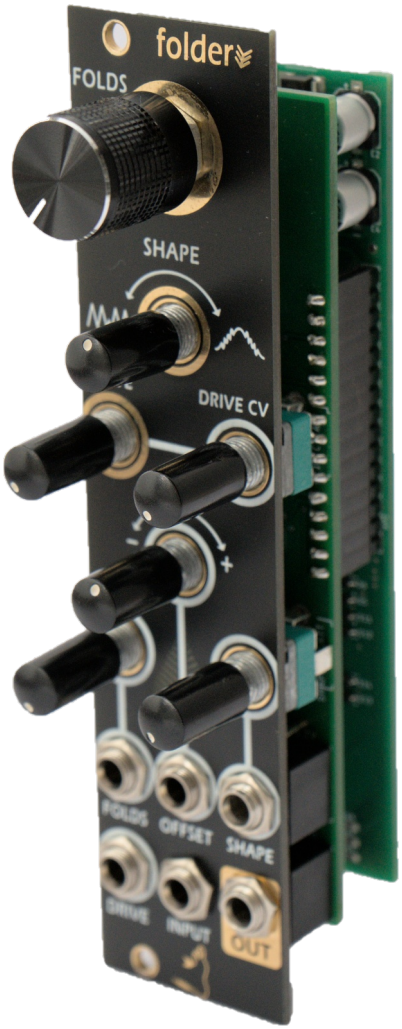
Folder

CV-controllable Wavefolder



Manual revision 02/09/2022

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Overview

Folder is a 6-stage wavefolder with full manual and CV control over all parameters.

Installation & Dimensions

Tenderfoot Electronics modules are designed to be used with a Eurorack-compatible case with M3 mounting holes. Folder fits the 3U Eurorack standard and is 6HP wide.

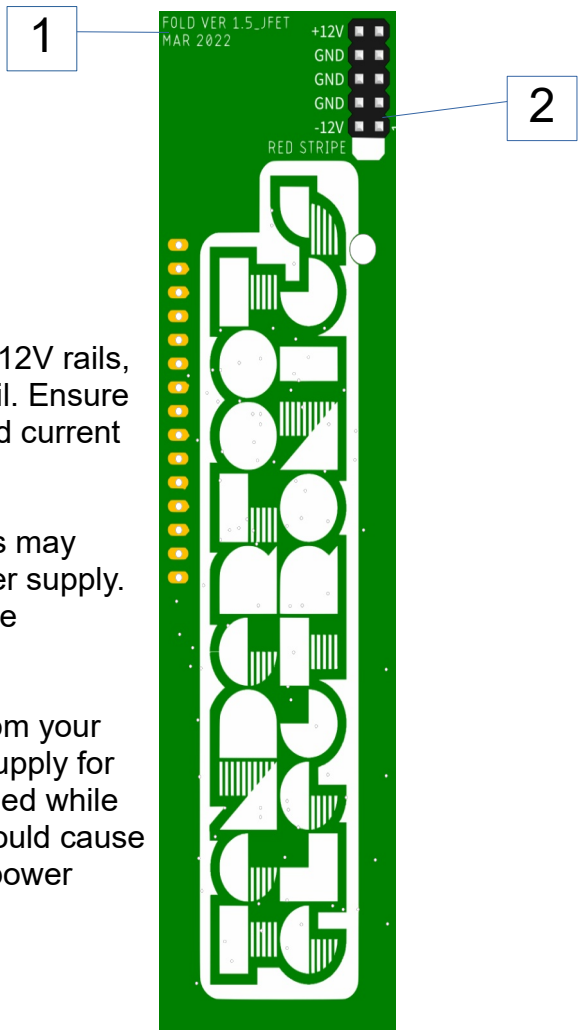
Height: **3U** (128.5mm)

Width: **6HP** (30mm)

Depth: **35mm**

Current Draw: **+12V:** 64mA **+5V:** 0mA **-12V:** 49mA

The back of the module



The rear of the module reveals:
(1) the PCB version
(2) the power header

INSTALLATION

Folder draws current from the +12V and -12V rails, and can be used in cases without a 5V rail. Ensure your power supply can supply the required current for the module as stated above.

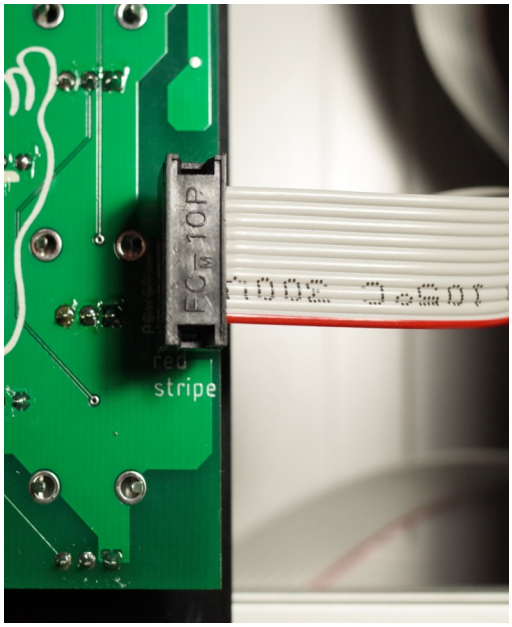
Failure to adequately power your modules may result in damage to your modules or power supply. If you are unsure, please contact us before proceeding.

Before installing or removing a module from your rack, ensure that you turn off the power supply for the case. If a module is removed or installed while the rack power supply is switched on, it could cause serious damage to either the module, or power supply, or both.

Connecting the power cable to the module:

When connecting the ribbon cable to the back of the module, make sure you attach it to the 10-pin header.

The power header is labelled at one end with a bold stripe, and the words “red stripe”. This marks the position of the -12V power rail Align the red stripe on the ribbon cable with the “red stripe” label on the PCB.



Once the cable is attached to the module, connect the 16-pin end of the cable to your case's power supply, again ensuring the red stripe lines up with that of the power supply’s -12V pins.

Using the included screws, screw the module on to your rails, power up, and enjoy! If at any time you notice irregularities in the operation of the module, turn off the case and inspect all connections and cables.

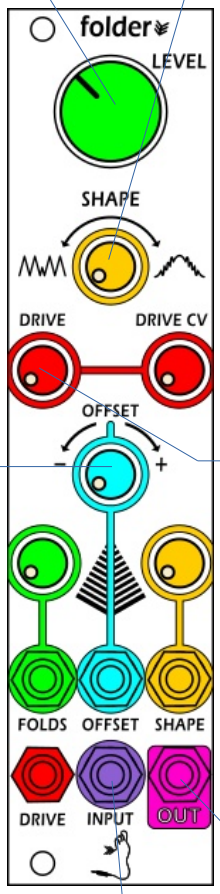
Panel Layout

Folds
Also labelled as “LEVEL” in older revisions. This is the main control to increase the number of folds applied to the input signal. Set all the way to the counter-clockwise position, the output will be silent. Allowing the module to be used without the need of an additional VCA afterward.

The Folds CV input in green is added to the overall level of the fold control, and can be adjusted with the connected attenuator dial.

Offset
The offset dial is a bipolar control and can add an offset of between -4V and +4V to the input signal to alter the timbre of the output. The centre position of the dial, with the indicator pointing directly up, is the 0V offset position.

When the offset CV jack is patched to a source of modulation, the offset dial becomes an attenuverter for the modulation.



Shape
The shape control is an additional way to sculpt the timbre of the output. Turned fully counter-clockwise, the wavefolder works in a typical fashion, with all of the folds occurring at +/- 4V.

Turned fully clockwise, the fold positions will be offset along the path of the input signal.

The Shape can also be controlled using the CV input jack in yellow.

Drive
The Drive dial in red on the left of the module controls the overdrive circuit at the end of the wavefolding section. Turned all the way clockwise, it is possible to get a lot of overdrive with hard clipping.

The Drive CV dial on the right is the attenuator for the Drive input jack.

Input
Audio input

Out
Audio Output

Wavefolder signal processing

The “Folds” control of the wavefolder acts as a signal amplifier. As the signal reaches either +4V or 4V, the waveform is flipped back on itself at that point. With higher gain, the signal will be folded back on to itself multiple times. Since “Folder” is a 6-stage design, the input signal can be folded back on to itself up to 6 times. (figure 1)

Adding an offset to the signal will stagger the position of the folds on the positive and negative sections of the waveform. (figure 2)

Figure 1

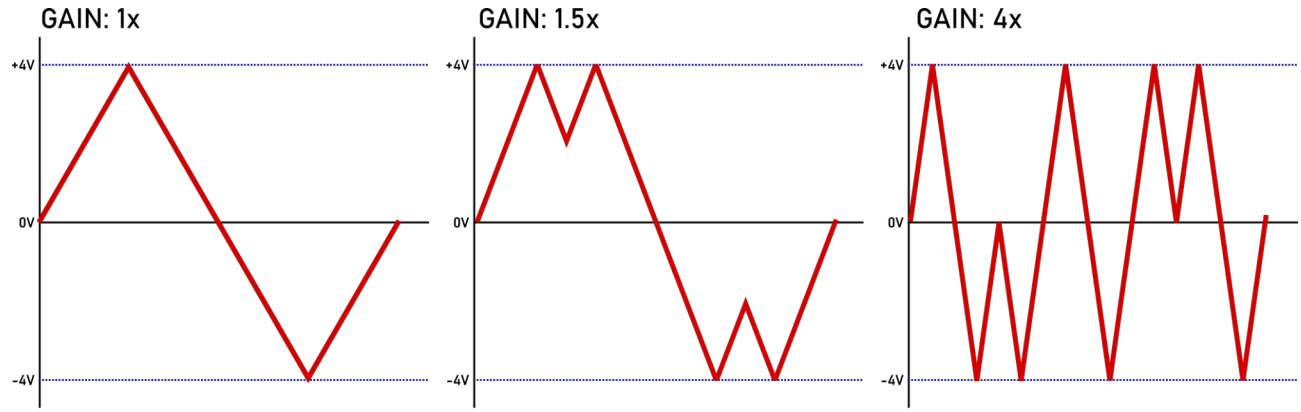


Figure 2

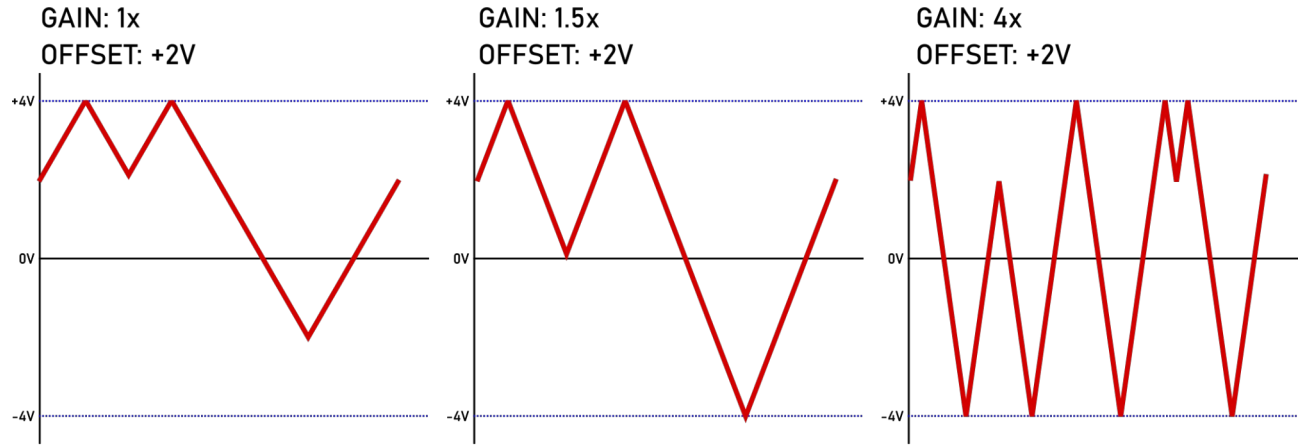
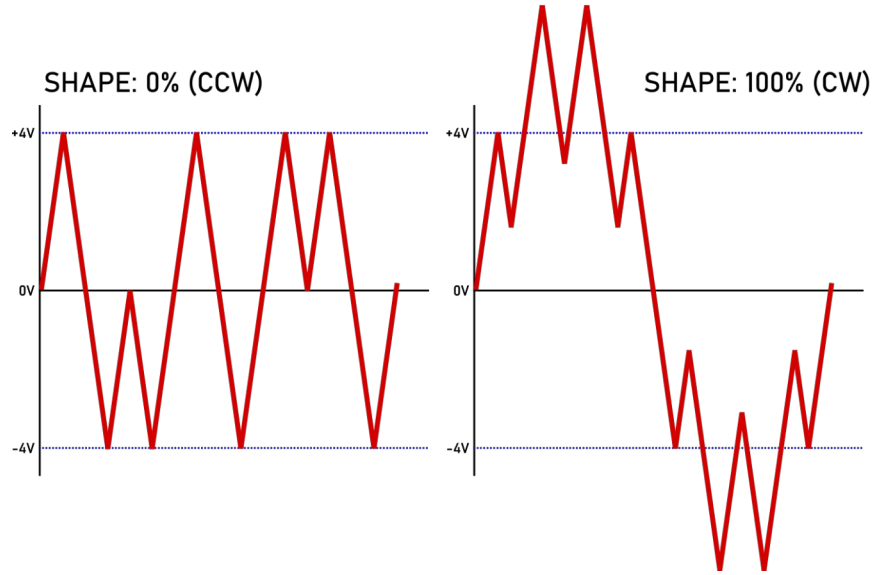


Figure 3



The shape control can mix the original unfolded waveform back into the folding process. This has the effect of offsetting the position of the fold points along the shape of the original waveform. This can help to soften the timbre of the output.

Contact Us

Have fun with your Pinhl module, and if you have any questions or would like to get in touch with us, you can send an e-mail to:

support@tenderfootelectronics.com !