Mungo
ENTERPRISES

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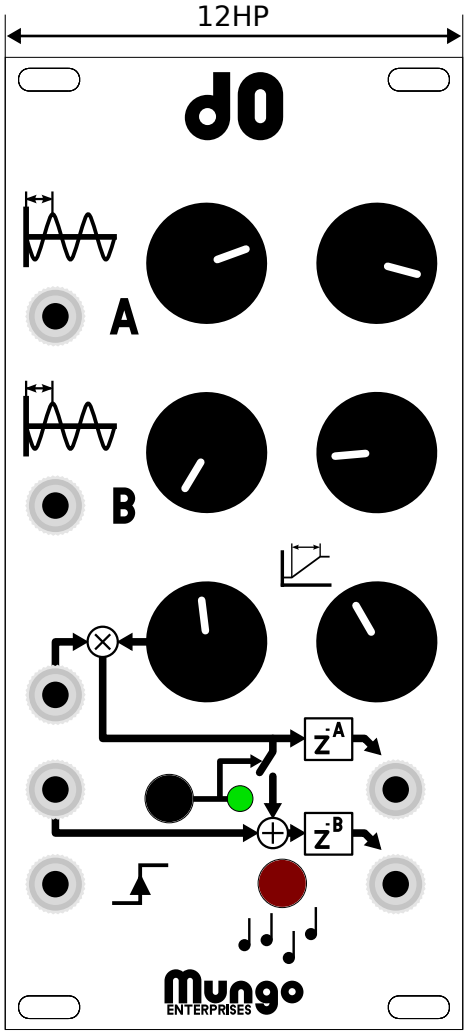

Delay Modulation, independent to each channel, signal input and depth control scaled in volts per octave.

Input Amplifier, bipolar gain control of channel A.

Signal Inputs, full range DC coupled inputs.

Sum Button, adds channel A into channel B predelay. Holding zoom +/- while pressing this button enables a DC cut filter on both the inputs.

Clock Input, frequency tracking input applied to both channels. Delay times remain a constant multiple of the clock period.

Delay Offset, independent to each channel, added to the modulation and midi note value. Exponentially scaled. Ranges from less than 0.2 ms to over 2 s.

Slew Limiter, variable rate limiting applied to the linear delay time of both channels independently. Exponentially scaled. Rotate counterclockwise for slew limit or clockwise for low pass filter.

Signal Outputs, full range DC coupled outputs.

Tune Button, generates a C_4 reference square wave on both outputs. Feeding back this to the A input calibrates the delay transit time for tuned feedback. Holding zoom +/- while pressing this button sets the delay time of both channels to track midi note data.
Clears any offset from clock input.

Power, +12V 80mA
-12V 10mA

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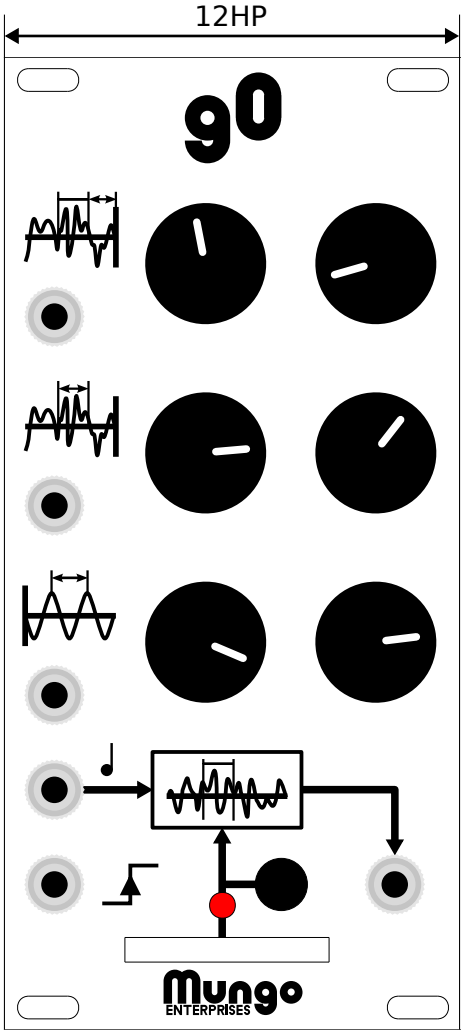
g0



Depth Modulation, signal input and depth control.
Linear scaling in volts per second of delay/offset time.

Width Modulation, signal input and depth control.
Exponential scaling in volts per octave of audio window..

Frequency Modulation, signal input and depth control.
Exponential scaling in volts per octave.

Input, calibrated 1V per octave input during waveform playback. Input for live audio.

Reset Input, positive going edge triggers reset of waveform playback. High level holds grain or recording during live input.

Function Button, swaps between live modes or loads file from SD card if present.
Holding zoom when pressing sets granular mode:
+ minimises sidebands.
− maximises sidebands.

SD Card, reads 16 bit mono .wav files off FAT formatted SD cards from W0.WAV to WF.WAV in sequence. Sample rate insensitive, maximum length 500,000 samples.

Depth Offset, added to modulation sets the offset of the audio window ratiometrically to the remaining buffer within the complete waveform.

Width Offset, added to modulation sets the width of the audio window ratiometrically to the full size of waveform. Exponentially scaled.

Frequency Offset, added to the fixed and variable modulation and midi note value. Exponentially scaled.

Output Filter, during live modes press and hold the function button until the LED turns back to the same state.
LED lit, high pass filter enabled.
LED unlit, DC coupled output.

Audio Output, output signal of modulated audio.

Power, +12V 80mA
-12V 10mA

Live Mode, the function button swaps between the two live modes when an SD card is not installed.

While the LED is lit the hold mode is enabled, it samples the current grain at a positive going edge on the reset input and continues to play this until a negative going edge ignoring any changes to the window depth or width while held. Note, the buffer will overflow if the hold is maintained for many seconds and the grain will glitch as it jumps to the new data.

Swapping to the record pause mode (LED unlit), holding the reset input high will disable filling the buffer. This can be used to sample live sounds for manipulation as all functions operate as normal, but while paused all incoming sound will be lost.

Playback Mode, the function button cycles through the wave files stored on the SD card if inserted. Once a file is loaded the card can be removed and the sound will remain in memory until the function button is pressed again to change mode or load another sound.

Files named W0.WAV to W9.WAV and WA.WAV to WF.WAV stored in the root directory will be loaded in sequence one at a time. They must be 16 bit mono wave files in the .wav format, the sample rate is ignored and up to 500,000 samples can be loaded into the buffer for realtime manipulation.

Interpolation, holding in zoom (+ or −) when loading a waveform or changing modes will enable interpolation of the output audio and select the sideband mode. Leaving zoom neutral will disable interpolation and sideband processing.

Grain size, has a strong effect on the resultant sounds, adjusting the window size relative to the lowest frequency in the source material dramatically changes the result.

Shorter than lowest frequency,
splits the spectrum either side of the grain frequency.

Several cycles of lowest frequency,
maintains only tonal information, can create strong formants.

Many cycles,
microsound fragments that are hard to identify their source.

Shorter than the shortest note,
fragments where the source is clear but rhythmically devoid.

Longer than a beat,
maintains the rhythmic context of the source material.

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Zoom, the modules support dynamic zoom of the knobs and additional options controlled by an external switch. A single switch can be shared between multiple modules, by joining just the zoom pins between modules with the supplied cable.

Shorting the zoom pin to ground zooms out, while shorting to the supplied 3.3V will zoom in.

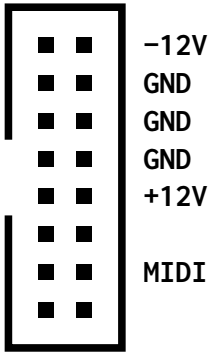
The recommended zoom accessory includes a 3-way momentary switch mounted on a 2HP panel to allow easy control of zoom.

A single pole momentary switch between zoom and ground provides a single level of zoom control.

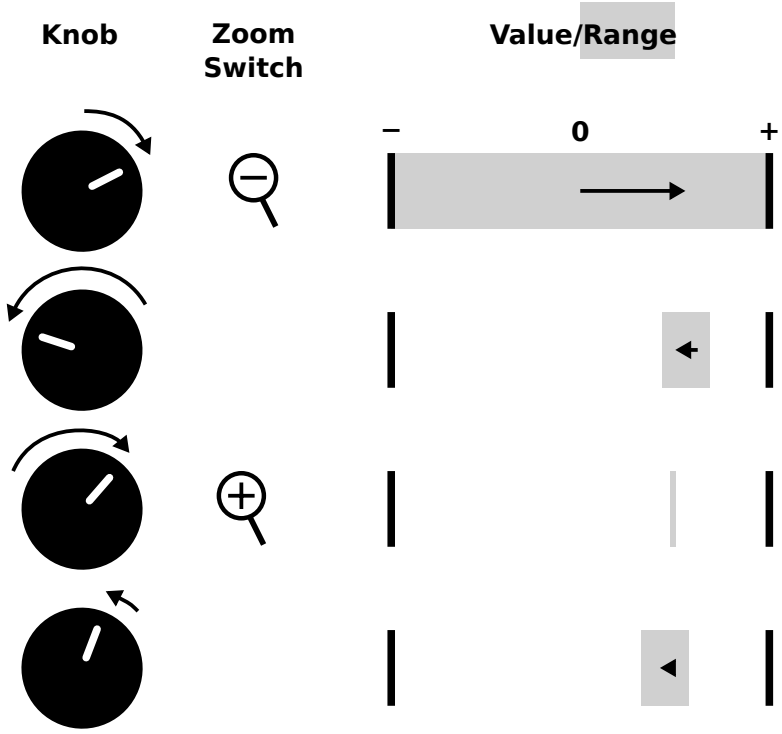
If zoom is not desired, place a jumper or the supplied cable between the zoom pin and ground to operate the knobs over their full range.

Power, the modules all follow the standard 16pin power connector allocating one of the bussing signals to midi.

WARNING, the midi is 3.3V logic and should not be connected to anything other than the optional midi kit.



Midi, each module can save and recall settings using program change messages. Holding the zoom switch in the + position when sending a program change will save the settings to that memory location. Any other program change messages will recall the settings stored at that memory location.



Visual Indent, modules will blink an LED when bipolar controls pass through their true 0 position.