

# Demeter amplification

6900 Kingsbury Road | Templeton, CA 93465 | 805-461-4100 | <http://www.demeteramps.com/>

## VTCL-2 Tube Optical Compressor User's Guide

### CONTROLS

**Input Gain:** sets the input level that goes into the gain stage amplifier of the compressor/limiter. This level should be set just below the level that causes the overload LED to light for the best signal to noise ratio. (Occasional blinking of the LED is OK.)

**Threshold:** turned to the left, or maximum setting, no compression will take place. Turning the control to the right (clockwise) lowers the threshold and compression will begin to take place. The amount of change in amplitude you hear can be seen if you set your meter selector to change. Turning up the output gain control compensates for the volume loss.

**Attack:** sets the speed at which compression takes place. This control has a great effect on the sound and because of its range (0.5 milliseconds to 200 milliseconds) it can be set to realize a broad range of sounds and effects. For most applications the attack control should be set to the fastest speed (fully clockwise) where the attack is inaudible.

**Release:** sets the time the signal remains compressed after the input signal drops below the threshold level. This control has a wide range (200 milliseconds to 10 seconds) and can best be set by ear to achieve the most natural sound. Please note that the greater the amount of compression used the longer the release time will be.

**Meter Range Switch:** this switch sets the sensitivity of the meter to either normal (0 db) or to higher sensitivity (-10 db) for use with semiprofessional equipment.

**Meter Selector Switch:** selects which information the meter is showing. Set on Input the selector shows the unaffected signal coming in. Output shows the signal level going out.

**Change:** shows the amount of change in level as the signal is being compressed.

**Output Gain:** sets the output level of the compressor limiter. This control is used to match levels after compression has taken place.

**Bypass Switch:** selects between the affected signal and the input signal and routes them through the unity gain tube output section. This control is useful in hearing how much the signal is being effected. In the out mode the compressor/limiter can be used as a tube buffer to warm up the audio signal path.

**Mode Switch:** selects between dual mono and linked stereo. In the dual mono mode the compressor/limiter is two separate units. In the stereo mode the input signals are mixed to activate the compressor circuit. The threshold, attack and release on channel one control both channels together. Input, output and meter controls are still separate.

**Ratio:** although the unit has no ratio control the ratio is affected by the amount of compression used. From 0 dB to 6 dB of compression the ratio is 4 to 1 (that is, if the input voltage increases 4 volts the output will increase 1 volt). From 6 dB to 10 dB the ratio is 6 to 1. From 10 dB on the unit acts as a limiter with a ratio greater than 20 to 1. This input sensitive ratio gives the compressor its natural sound.

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**Pin Selector (Rear Panel):** selects the output or input pin to which the hot (+) signal is routed . The I.E.C. standard is pin two hot. Some equipment may not adhere to this standard.

Here are some of the popular compressor settings which duplicate the settings on the vintage Fairchild 670 and Urei/Teletronix LA2A compressor/limiters. Please bear in mind that the slower release times only occur when the gain reduction is high (-20 to -30 dB). These are the Attack and Release times for the VTCL-2 at a variety of gain reduction (compression) settings:

The following are the LA2A and Fairchild settings:

Setting Attack (ms) Release (ms or sec)

LA2A 10ms 200ms to 5sec

Fairchild #1 1.5ms 250ms

Fairchild #2 1.5ms 800ms

Fairchild #3 3ms 2.2sec

Fairchild #4 6ms 5sec

Fairchild #5 3ms 500ms to 4sec

Fairchild #6 1.5ms 500ms to 4+sec