

MU-TRON PHASOR II OPERATING INSTRUCTIONS

Congratulations on your purchase of the Mu-tron Phasor II by Musitronics. Your new Phasor II follows the original Mu-tron Phasor in providing true state-of-the-art performance in a compact and rugged package for the working musician. The Mu-tron Phasor II uses the advanced electronic technology developed for the revolutionary Mu-tron Bi-Phase, which gives the Phasor II unequalled performance in terms of dynamic range, freedom from overload distortion, low noise, wide sweep range, and intensity and range of effect. In addition, the Mu-tron Phasor II has three, continuously-variable controls for Rate, Depth, and Feedback to give the musician complete, precise control over the wide range of effects possible.

CONTROLS

The **POWER** switch controls the AC power to the unit. When the unit is connected to a source of AC power and the top of the switch is depressed, the unit will be switched on and the LED indicator along side the switch will be illuminated.

The **RATE** control varies the rate of sweep of the phasing effect from a slowest sweep rate of 10 seconds per complete sweep cycle to a fastest sweep of 18 sweep cycles per second.

The **DEPTH** control adjusts the depth of the phasing effect by varying the width of the sweep range. As this control is turned up, the phasing effect will sweep over a wider and wider range of frequencies, producing a deeper effect.

The **FEEDBACK** control is unique to this model and its big brother, the Mu-tron Bi-Phase. By adding electronic feedback to the phase-shift circuitry, the Mu-tron Phasor II produces a pronounced sweeping sound which adds tremendous emphasis and intensity to the basic phasing effect, particularly at very slow sweep rates.

The **BY-PASS FOOT SWITCH** (unlabeled), located on the sloping front section of the Phasor II, switches the phasing effect on or off without affecting the loudness or tone quality of the signal. In the by-pass mode the Phasor II impedance-compensates the input signal to 600 ohms without changing the signal level or frequency response. This allows the use of long cables between the output of the Phasor II and the input of the amplifier without the signal loss, treble loss, or hum pick-up normally associated with long cables.

OPERATION

Connect the line cord of the Mu-tron Phasor II to a source of 117 volt AC power and turn on the Power switch so that the LED indicator lights up. Connect the output of your instrument (or the output of another sound modifier, such as a fuzz-tone or a Mu-tron III) to the "INST" input on the back of the Phasor II, and connect the "AMP" output of the Phasor II to the input of your amplifier (or other signal processor, such as an equalizer or echo).

Experiment with various settings of the Rate, Depth, and Feedback controls. Start with the following setting for a conventional phasor sound:

"Normal" Phasing:	Rate: 1 to 5	Depth: 8	Feedback: 0
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Then gradually turn up the Feedback control and adjust the Rate and Depth controls until you get the following setting:

"Super Sweep" Phasing:	Rate: 1 to 2	Depth: 10	Feedback: 10
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Now experiment with other rates and other combinations of the three settings, but remember these hints:

1. Feedback is most effective at slower sweep rates.
2. As the Rate is increased, the Depth should usually be decreased to prevent the effect from sounding choppy.
3. If you begin to hear distortion on certain notes as the Phasor sweeps past, turn the Feedback down slightly.

What does Mu-tron Phasor II do? How does it work?

Every musical signal consists of a number of different spectral components known as harmonics or overtones. Mu-tron Phasor II uses a six-stage variable phase-delay circuit to generate a phase-delayed signal.

This phase-delayed signal is electronically re-combined with a non-delayed signal, producing a series of cancellations and reinforcements in the overall frequency response, similar to a so-called comb filter.

As the amount of phase delay is varied, the cancellations move up and down the audio spectrum, subtly altering the harmonic structure of the original signal and thus producing the swirling, "spacey" sound known as phasing.

By adding electronic feedback to the phase-delay circuit, strong, sharp reinforcements are created in-between the cancellations. These strengthened reinforcements heighten the contrast between cancellation and reinforcement, and serve to emphasize the sweeping effect.

SPECIFICATIONS

Input Impedance: 390,000 ohms, unbalanced.

Output Impedance: 600 ohms, unbalanced.

Gain: Unity (less than 1 db insertion loss).

Frequency Response (Bypass): 20 Hz - 20 kHz \pm 2db.

Signal Handling Capability:

Minimum Feedback: 4 volts RMS, 11.2 volts Peak-to-Peak.

Maximum Feedback: 2 volts RMS, 5.6 volts Peak-to-Peak.

Signal-to-Noise Ratio: Better than 86 db below 2 volt input.

Phasing Rate: 0.1 Hz to 18 Hz, continuously variable.

AC Power Requirements: 117 volts AC, 60 Hz, 5 watts.

Warranty: 3 year limited warranty on parts and labor. Units returned to factory serviced in two working days.

Made in U.S.A.

