



micro amp



**Musical
Products Group**

**Operation
Manual**

MXR TECHNOLOGY

All products developed by MXR are a result of extensive experience in creative audio engineering. MXR products are designed by individuals who are actively involved in every facet of music, from performance through recording to playback. This sustained awareness of current trends and needs, combined with innovative design and construction techniques, allows MXR to produce carefully thought out products that are unique, versatile, and reliable. New ideas are constantly being tested, and existing products are subject to regular re-evaluation so you can be sure they reflect the latest technology.

There are MXR products to suit the needs of everyone involved with music. A wide variety of effects units, from a

basic stage unit to our highly sophisticated studio signal processors, are available to enhance any musical performance. Also included in the MXR line are products designed to improve the quality of sound in home stereo component systems. MXR is constantly striving to serve all areas of the world of music. The same care and attention is given to all MXR products, whether they are used in the home, in recording studios, or during live musical performances. All MXR products are designed and manufactured in the U.S.A. and carry a full warranty.

The MXR Micro Amp is a versatile battery powered instrument and transducer preamplifier suitable for use in a wide variety of applications.

A bifet operational amplifier, a recent development in linear integrated circuit technology, is incorporated in the Micro Amp. This device, coupled with well designed associated circuitry, provides a gain block with nearly ideal characteristics: an extremely high input impedance to virtually eliminate the effects of loading an instrument pickup or transducer and an output capable of driving a wide range of loads with ample signal swing. A gain control allows the user to adjust the gain of the Micro Amp from unity to twenty-six dB.

INTRODUCTION

The importance of loading a pickup or transducer as little as possible cannot be overstressed. Besides the effect of reduced output levels normally associated with loading problems, loading a ceramic or piezoelectric contact pickup may cause a rolloff of high or low frequencies. The Micro Amp is designed to preserve the full range of frequencies produced by your instrument and pickup, without adding any coloration of its own. Using the Micro Amp, you control how your sound is modified, if at all; it is not predetermined by loading effects.

We recommend that you first read this manual to familiarize yourself with the Micro Amp, its uses, and applications.

OPERATION

The MXR Micro Amp is exceptionally easy to use. The following discussion explains the functions of the two controls: the GAIN control and the bypass switch. Note that actual labels are indicated in all capital letters (e.g. the GAIN control).

The GAIN Control provides continuous adjustment of the Micro Amp's gain to suit the user's needs. Turning the control clockwise increases the gain from unity (output level equal to the input level) to twenty-six dB (output level twenty times the input level). The maximum amount of gain available is sufficient to raise the output level of virtually any transducer to instrument or line levels.

The bypass switch is a push-type foot-switch that allows the user to control whether the Micro Amp circuitry is placed in the signal path between the INPUT and OUTPUT jacks or bypassed.



APPLICATIONS

This discussion is intended to help you discover a few of the many applications of your MXR Micro Amp. This is only a starting point; experimentation is encouraged.

The Micro Amp is especially effective for use as a buffer amplifier with a wide variety of instrument pickups to eliminate the effects of loading. Loading most often manifests itself as a reduced signal level. However, loading problems may also appear as a loss of high or low frequencies, making your instrument sound dull and lifeless. This type of loading is especially prevalent when using ceramic or piezoelectric contact pickups. The Micro Amp eliminates both effects of loading and provides a flat response. In addition to using a Micro

Amp, it is also recommended that you experiment with the placement of the pickup on the instrument if possible. A small change in pickup placement may change the audible response considerably. Once the best position is found, a graphic equalizer may be used after the Micro Amp to further tailor the response. Simple tone controls do not provide enough resolution to adequately flatten low frequency resonances or high frequency "nodes" of the instrument-pickup system.

The Micro Amp may also be useful for the controllable gain function it provides. The level of low output transducers or instruments may be brought up to a more normal level or instrument levels may be amplified to line levels for use

with mixing consoles or studio effects. The Micro Amp has very low noise, allowing it to be used to improve the signal-to-noise performance in a signal chain by more effectively utilizing the available dynamic range of effects devices following it. The Micro Amp provides sufficient output level to overdrive the input stages of an amplifier to produce a pleasing distortion with some amps, especially those employing vacuum tubes. By using the rubber knob adapter supplied with the unit, the Micro Amp may be used to provide a foot-controlled volume "swell" function.

The combined buffer and gain characteristics lend themselves to further applications. Try the Micro Amp with a pair of headphones as a practice amp. Re-

APPLICATIONS

sults may vary with the type of headphone used; in general, higher impedance units work best. Note that when driving headphones, or other low impedances, the battery life may be reduced somewhat. For the ultimate in "clean" sound, use the Micro Amp to drive a high quality basic power amp and monitor speakers directly. The output of the Micro Amp may also be run directly into the auxiliary inputs on your stereo system or into the line inputs on your tape deck when recording, allowing a much cleaner recording than that obtained by using the mic inputs.

INSTALLATION

The MXR Micro Amp is designed for in-line connection between an instrument and amplifier (or between an instrument and effects box) using cords with standard ¼" phone plugs.

In virtually all cases, the Micro Amp should come directly after the instrument in the signal chain. This will buffer the instrument pickups from the loading effects of successive stages. In addition, the Micro Amp can provide a stronger signal for later stages to act on and improve the overall signal-to-noise performance.

The Micro Amp is powered by a single nine volt battery. Due to the extremely low current consumption, a fresh, high quality battery should last for more than

1500 hours in normal use. Eventually the battery will need to be replaced, however. Access to the battery compartment is obtained by removing the four screws securing the bottom cover. If you suspect that your Micro Amp is malfunctioning, try replacing the battery with a new one before returning the unit for repair.

The input jack on the Micro Amp also serves as the power switch. Therefore, be sure to unplug the cord to the input when not in use to insure maximum battery life.

If the unit is to be shipped or stored for a long period of time (months), the battery should be removed to prevent damage from battery leakage.

CIRCUIT DESCRIPTION

An FET input provides a very high input impedance while offering reduced susceptibility to radio frequency interference (RFI) due to its inherent high frequency linearity. A bipolar output stage provides a low impedance output for driving long cables and other equipment. Both the input and output are protected from shorts or transients. Frequencies below and above the audio spectrum are rolled off to provide an additional measure of noise and RFI rejection. A battery power source provides portable operation free from AC hum problems.

An important design feature of the Micro Amp is that the GAIN control directly varies the gain of the amplifier instead of providing fixed gain with variable input or output signal attenuation. This allows the signal-to-noise ratio and maximum signal level capability to be optimized for a given application.

SPECIFICATIONS

Maximum Input Level	+ 8 dBV
Maximum Output Level	+ 8 dBV
Input Impedance	6.8 M ohms
Output Impedance	470 ohms
Equivalent Input Noise	-103 dBV
THD	less than .1% at any gain setting
Frequency Response	12 Hz - 24 kHz \pm 3 dB
Gain	min 0 dB, max + 26 dB
Power Requirements	9 volt battery, .3 ma
Typical Battery Life	1500 hours with fresh battery

All products in the MXR Musical Products group are warranted to function properly for a period of one year from the date of purchase. If any unit fails to function properly within the warranty period, free repair, and the option of replacement or refund in the event MXR is unable to repair the unit, are MXR's only obligations. This warranty does not cover any consequential damages or damage to the unit due to misuse, accident, or neglect. MXR retains the right to make such determination on the basis of factory inspection. Products returned to MXR must be shipped prepaid. This

FULL WARRANTY

warranty remains valid only if repairs are performed by MXR and provided that the serial number on the unit has not been defaced or removed. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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