

Myriad Design

Phantom Piezo Preamp V2

6517V2

(SKU SV206, SV207)

User Guide V1.0 – Dec 2017

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Thank you for purchasing the Phantom Piezo Preamp module V2.

The preamp is designed for integration into a musical instrument, an art installation or a hydrophone and its purpose is to buffer the output of a piezo transducer element. The preamp is professionally hand-built and the JFET transistors are very closely matched. The preamp has very low distortion and noise.

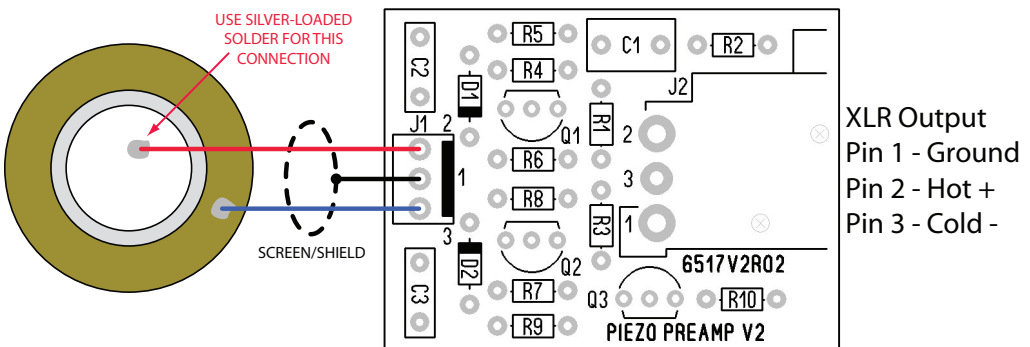
The output voltage of a piezo is comparatively large but the impedance is very high. The preamp provides some voltage-gain (approx. 12dB) but mainly lowers the output impedance of the piezo transducer to allow the piezo to drive a significant length of microphone cable.

The unit must be connected to a mixing desk/console/sound board balanced microphone input using a standard balanced XLRM-to-XLRF microphone cable. The mixing desk/console must have phantom power facility of 12-48V. The unit does not incorporate a battery or other power source.

The preamp serves the same purpose as a D.I. box. However, the preamp will have better performance than a DI box because the cable between the piezo transducer and the piezo preamp is very short. Think of the module as functionally equivalent to a phantom-powered condenser microphone.

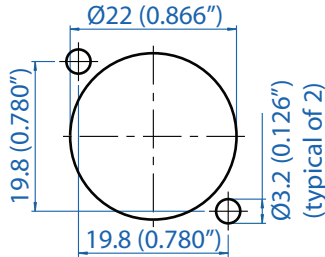
If the module is incorporated into a wooden case, such as a stomp box, cigar box guitar, or cajon, you must create a shielded environment for the module and the piezo element either with a metal box, or with self-adhesive copper shielding (or aluminium shielding).

For further information on shielding, search YouTube for “shielding a guitar”. Ensure that the piezo element is not in electrical contact with the shielding.

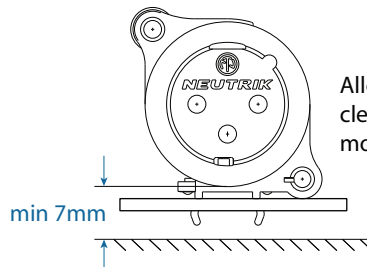


Connect the piezo transducer to pins 2 and 3 on the input connector. It does not matter which way around you connect pins 2 and 3. Connect pin 1 to the shield. If your transducer has only two connections, connect the signal to pin 2 and the shield to pins 1 and 3.

The preamp module is physically supported by the output connector. There is no need for additional support for the preamp circuit board.



Panel cut-out (actual size, front view)



Allow minimum 7mm (0.275") clearance between the connector mounting hole and the enclosure

Selecting a Piezo Transducer

Piezo transducers come in many variations. Generally, the larger the diameter, the better the low-frequency response. Search Ebay for "piezo pickup".

Version 2 Input Protection

Version 2 incorporates back-to-back zener diodes which clamp the maximum input voltage to approximately $\pm 4V$ (8V peak-to-peak). If you do not require input protection, please clip the diodes out with side-cutters.

Using The Preamp

Piezo transducers have good frequency response and high output voltage. The preamp will drive at least 100m of low-capacitance microphone cable without significant loss of high-frequencies.

- Connect the unit to a microphone input on your mixing desk/console/board.
- Switch phantom power on.
- Consider using the PAD attenuator (if available and if necessary) to avoid overloading the microphone preamp.
- Use equalisation (EQ) to alter the tonal quality of the piezo transducer.
- Use a limiter and/or compressor to reduce dynamic range or avoid overloads.

Note:

The Phantom Piezo Module has been hand soldered using a proprietary no-clean-flux solder. This is so we do not have to use environmentally unsatisfactory solvents to clean flux residue from the circuit board.

There is no need to clean the circuit board further.

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