
PHONO

LOCO

.

SUTHERLAND



“ I am surprised to be sitting here writing an owner’s manual for the **PHONO LOCO**. It seems so official. The **PHONO LOCO** has made the journey from an unlikely experiment to a solid product. Most of this time, I was telling myself ‘the **LOCO** is unmarketable’. BUT—tossing aside marketability is an amazing freedom.

— **RON SUTHERLAND**

The initial prototype listening was so emotionally rich. It kicked in a stubborn determination to perfect the full performance possibilities. That's when the project truly went loco. With performance as the arbiter of each design decision, the **PHONO LOCO** was steadfastly focused on delivering a seductive listening experience.

The **PHONO LOCO** was never designed or built to be a commodity.

It has taken on a life and personality of it's own.



– A Bit of History –

Sutherland has been making phono preamps for a good long time. By focusing almost exclusively on phono preamps, our design and circuitry has benefited from continued refinement and improvement over the years. All of those designs were based upon voltage amplification.

The cartridge delivers a small voltage to the phono preamp input. This voltage is then multiplied to create a larger output voltage (along with RIAA EQ). A typical voltage multiplier of 1,000 can also be expressed as 60 dB.

One millivolt in → one volt out.





You may have also noticed a new kind of phono preamp design—usually referred to as ‘current input’. Until recently, that approach has been very much in the background. But, listeners and reviewers are now giving it some serious consideration. And many love what they hear.

Current Input

The input signal comes from the current flowing through the cartridge, NOT the voltage from the cartridge. That current information is the input for a transimpedance gain stage. I.e. the input signal is current and the output signal is voltage.

— LINKING INTO YOUR SYSTEM —



At first glance, the connections on the back panel of the **PHONO LOCO** appear totally conventional. There is the usual IEC input for the AC power cord, and a ground screw for grounding the turntable. The RCA jacks deliver an output signal to your line-level preamp. Closer examination shows them to be WBT nextgen with Pure Fine Silver contacts—an unusually expensive choice that is rarely seen on preamps at even the most elevated price.

The big surprise...signal input connections are with XLR connectors. To optimize performance, the input stage **requires** a floating connection to both cartridge coil terminals. There must be no direct connection from either coil side to chassis ground.

XLR pin assignments are as follows:

Pin #1: overall cable shield

Pin #2: to coil +

Pin #3: to coil -

For information on using the included RCA to XLR adapter, see Appendix A.

For information on connection to turntables with built in RCA jacks, see Appendix B.

Load Settings

There are no loading adjustments in the **PHONO LOCO**. Your cartridge will see a load of zero Ohms. The input signal will be the current your cartridge produces into that virtual short. No need to worry about or fuss around with loading.

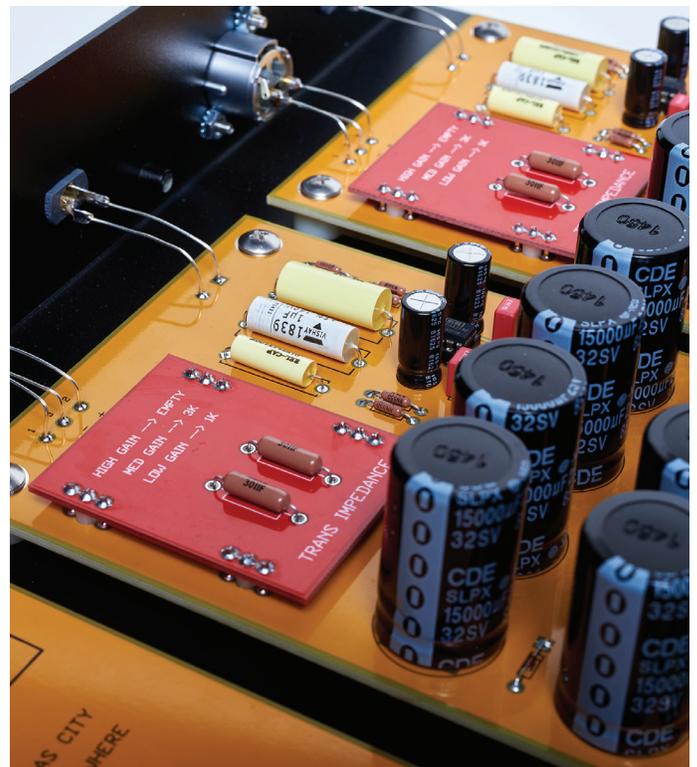
Gain Settings

Your **PHONO LOCO** is factory-set to medium gain. That should work very well in most situations. The usual concerns about cartridge output voltage do not apply here. Cartridges of varied output voltage specs tend to supply about the same level of drive current into a short. I.e. higher output voltages usually have higher resistance while lower output voltages usually have lower resistance. Into a virtual short, most deliver about the same current signal.

If your particular situation would benefit from a gain adjustment, you can change it. Inside, on the red circuit boards, you will see a place for gain setting resistors.

The **PHONO LOCO** ships with 3k resistors installed for medium gain. You can boost the output voltage 6dB by removing those resistors. Or, you can reduce the output voltage 6dB by replacing the 3k resistors with 1k counterparts.

No matter which gain you select, all four installed resistors must be the same value.





Size

17" wide
17" deep
3.25" high

Shipping Box

24" wide
24" deep
11" high

Contact Info

Sutherland Engineering, Inc.

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Kansas City, MO 64131
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Email: ron@sutherlandengineering.com
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Weight

Unit Weight: 21lbs
Shipping Weight: 26lbs

Operating Voltage Requirements

105 – 125 VAC, 12 watts
210 – 250 VAC units are available on special order
Note: operating voltage is NOT universal and cannot be field modified.

Warranty

5 years parts and labor. Transferable. Only valid for units that have not been modified or abused.

Appendix A

Using the Included RCA to XLR Adapters

Two special RCA to XLR adapters are included in the accessory box. Most turntable/arm cables terminate with an RCA plug. In most cases, using the adapters will be plug and play.

The typical, best practices for TT to preamp interconnects will work just fine. That is: the coil + and coil – signals are conveyed to the RCA plug via a shielded twisted pair. The coil + goes to the RCA center pin and the coil – goes to the RCA shell. There is an overall shield that is NOT connected at all to the RCA plug. The shield has it's own ground wire that will go to the **PHONO LOCO** chassis ground screw.

For best performance, you will want to invest in XLR terminated cabling. For many arms, that cable would have a DIN socket at the arm end with two XLR plugs at the preamp end. And probably a separate ground wire.

There may be a temptation to upgrade from the supplied adapters to something more luxuriously adorned with gold. That is unlikely to work. Most all such adapters have pin #3 and pin #1 internally connected. Thus the requirement that both pin #2 and pin #3 float with respect to ground is not met.

Appendix B

Connecting to Turntables with Built-In RCA Jacks

Two cables will be required. Each will be a twisted pair with an overall shield. The twisted pair will convey the signal. The RCA center pin will go to the XLR #2 pin. The RCA shell will go to the XLR #3 pin. The overall shield will ONLY go to XLR pin #1. The shield MUST NOT connect to anything at the RCA end.

Your dealer will help you with this. Most of the time it is just plug and play. If your situation is different, don't worry. We will get you taken care of. There is a strict requirement that both signal lines float with respect to ground. With that met, you are all set to go.