

Lavry Engineering

XLR Polarity Information

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Polarity and “Balanced” or “Unbalanced” basics-

Audio XLR connectors are typically used for “Balanced” connections. This means audio signals are present on both Pin 2 and Pin 3 of the XLR connector.

- The signal is “non-inverted” (which we will refer to as “+”) on one of these pins and “inverted” on the other pin (which we will refer to as “-”).
- “Non-inverted” means that a positive-going peak of the audio waveform will result in a positive voltage on the “+” pin.
- “Inverted” means a positive-going peak of the audio waveform will result in a negative voltage on the “-” pin.
- This is also true for “Unbalanced” audio connections, the difference being that the other side of the signal is GROUND instead of an inverted version of the waveform on the signal carrying pin.

It is therefore possible to have an inverted audio signal on an unbalanced connection. While this does not cause any problems electrically, it may cause a perceptible loss of fidelity. Assuming there are no more polarity inversions in the reproduction chain, this would cause the speaker reproducing the audio to move opposite the direction it should to accurately reproduce the sound waveform.

In some cases, the need to operate Lavry converters in **“Unbalanced”** mode may arise.

To retain good noise rejection qualities, Lavry Engineering recommends operating its AD converters with balanced inputs for both balanced and unbalanced sources.

Since the outputs of the DA converters are transformerless, connecting one of the signal pins to ground would result in an amplifier driving a near short-circuit. To avoid this problem, there are internal jumpers to configure the XLR connections of the DA converters for proper unbalanced operation. This allows you to select which pin is ACTIVE (has signal) and route the other pin to ground (instead of the output of an amplifier). Please see the specific device's owner's manual for details.

Please also keep in mind that the POLARITY setting of the DA converter should correspond to the ACTIVE pin on the XLR (not ground).

Below is a list of the standard polarity for all Lavry Engineering converters.
Only "+" or "non-inverting" pins are listed.
The other signal pin will either be "-" or "inverting" for balanced operation or "Ground"
for unbalanced operation.

LavryGold-

AD-122 MkIII-

Pin 2 + with "Polarity" menu item set to "+"

Pin 3 + with "Polarity" menu item set to "-"

DA-924-

Pin 2 +

Front Panel "Invert" switches to Pin 3 +

LavryBlue-

M•DA-824 Polarity-

Set by front panel Switch (shipped "Pin 2+")

M•AD-824 Polarity-

DIP Switch #2 "OFF" = Pin 2 + (As shipped)

DIP Switch #2 "ON" = Pin 3 +

LavryBlack-

DA-10

Pin 3 +

Front Panel "Invert" switches to Pin 2 +