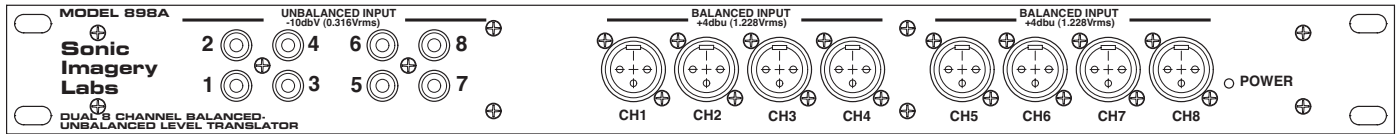




High Performance Audio Electronics



Front Panel

Model 898B • 8 Channel Balanced/Unbalanced Level Translator

General Description

The Sonic Imagery Labs, Model 898B is a high performance professional grade tool used to convert unbalanced -10 dBV consumer line level audio signals to balanced +4 dBu professional levels - and vice versa. The only product available that provides 8 channels each direction, simultaneously.

Unbalanced lines typically should be kept as short as possible to prevent the undesirable effects of microphonics, hum and noise pickup. The Model 898B allows the conversion to and from balanced lines that can be run up to 500 feet without the loss of audio quality.

Signal to noise and common mode rejection

performance are perfectly preserved by using the 898B, since it incorporates precision laser trimmed components that are fully specified for high performance audio applications and have outstanding AC characteristics, including ultra low harmonic distortion (0.0005% at 1KHz), the ability to drive capacitive lines and remain stable, and high slew rate (15V/uS).

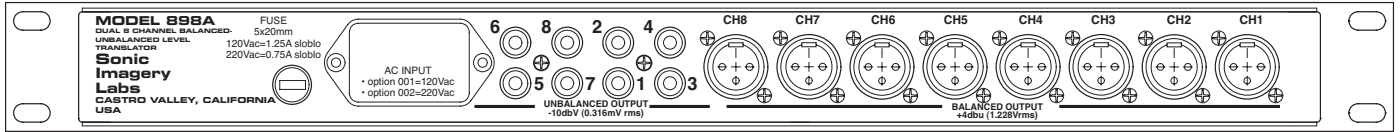
The Sonic Imagery Labs Model 898B's one rack space package and performance provides the answer to the most demanding applications requiring precision level conversion and input / output line balancing and unbalancing.

Features

- **8 Channels of -10dBV to +4dBu Conversion**
- **8 Channels of +4dBu to -10dBV Conversion**
- **Ultra Precision Laser Trimmed Line Receivers**
- **Precision Laser Trimmed Balanced Line Drivers**
- **Ultra Low Total Harmonic Distortion and Noise**
- **DC to 200Khz Bandwidth (direct coupled)**
- **High Current Output Drive in both directions**
- **+25dBu Maximum Levels**
- **Ability to drive 300Ω Minimum Loads**
- **RCA & XLR Interface Connections**
- **Channel to Channel Crosstalk > -105dB**
- **Made in the USA**



High Performance Audio Electronics



Rear Panel

Wiring Interface

The Model 898B's balanced +4 dBu inputs and outputs conform to the IEC 268-12 XLR wiring standard of pin 2(+) and pin 3 (-). On the XLR male input, an option located on the pcb allows the user to tie pin 1 to audio ground. The unbalanced -10 dBV inputs and outputs are gold plated RCA phono type connectors.

The Model 898B is capable of driving large signals into 600Ω loads over long cables. Low impedance shielded audio cables such as the standard Belden 8451 or 9452 (or similar) are recommended, especially in applications where long cable lengths are required.

Driving Impedances

The balanced output has the ability to drive 32 volts peak to peak (23.28dBu) into a 600Ω load across 500 feet of cable without loss of audio quality (See Figure 1). The unbalanced drive has the same capability but cable runs should be limited to 10 feet or less.

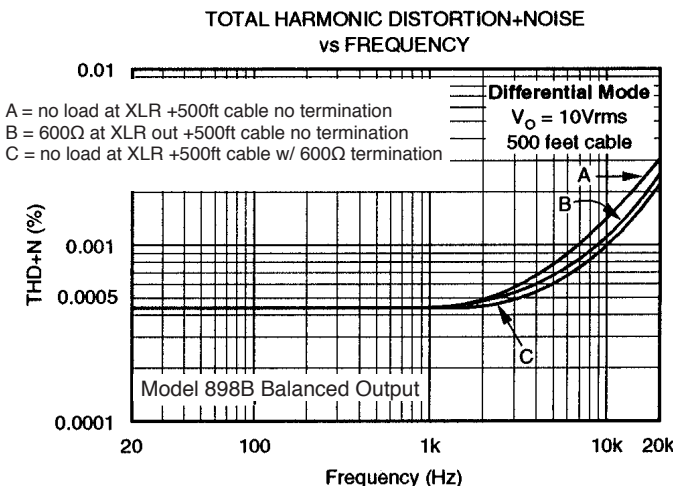


Figure 1. -10 dBV unbalanced input to +4 dBu balanced output.

Balanced +4 dBu Input Characteristics

The balanced +4 dBu input signal is conditioned by precision laser trimmed differential line receivers, that feature ultra low distortion and noise performance (0.0004% (see figure 2)) as well as better than 90 dB common mode noise rejection (CMR). The source impedances connected to the balanced input must be nearly equal to assure good common mode noise rejection. A 5Ω mismatch in source impedance will degrade the CMR to approximately 77 dB (RTO). If the source has a known mismatch, an additional resistor in series with the opposite input can be added to preserve good CMR.

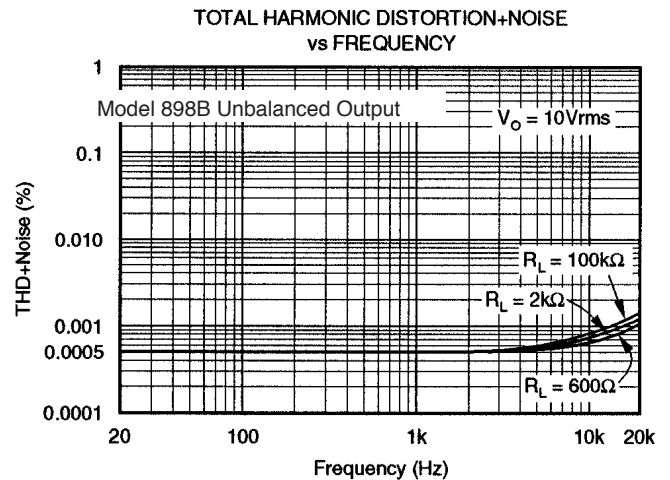


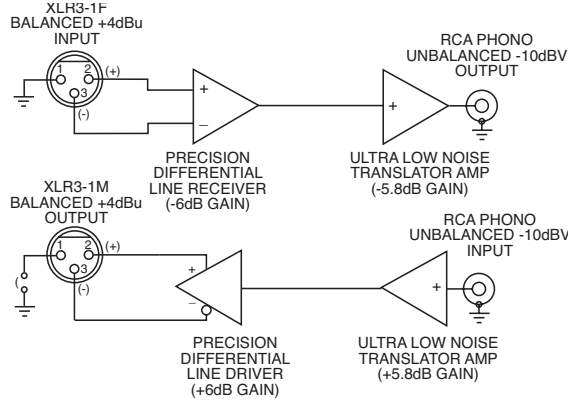
Figure 2. +4 dBu balanced input to -10 dBV unbalanced output.

Unbalanced -10 dBV Input Characteristics

The unbalanced -10dBV input circuitry also feature excellent audio characteristics. THD+Noise is below 0.0005% throughout most of the audio band (see figure 3). The unbalanced input impedance is fixed at 10KΩ to match the drive characteristics of consumer equipment.



Block Diagram



Application Information (continued)

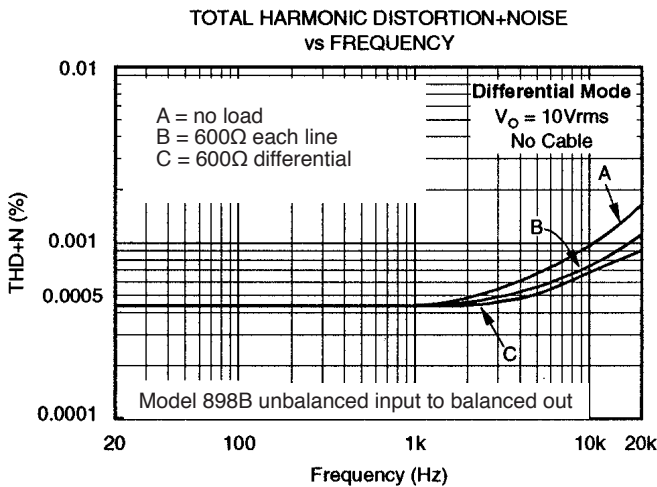


Figure 3. -10 dBv unbalanced input to +4 dBu balanced output.

Chassis Grounding

The rear surface of the rack mounting ears are unplated for chassis grounding purposes. Good electrical practice dictates earth grounding the Model 898B. If the ground integrity of the rack is in doubt, run a wire from the rack to a known good earth ground.

Power Options

The Model 898B is powered by 117V nominal line voltage and is supplied with a 6 foot IEC removable universal line cord. If ordering for Asian or European use, the unit will be configured for use with 220V line voltages and the user replaceable fuse will be substituted with the appropriate value for the new line voltage.

Specifications

-10 dBV to +4 dBu (RCA Phono Input to XLR3-1 Output)
Unbalanced to Balanced Direction

- Nominal input reference level -10 dBV(0.316Vrms)
- Nom. input ref. level channel to channel accuracy +/-1%
- Bandwidth DC-175Khz +0 -0.2dB
175Khz-250Khz +0 -1dB
375Khz -3dB
0.0005%
- THD+Noise@1Khz, Rload 600Ω Vo=10Vrms -98dBu
- Noise Floor, 20Khz BW, RTO +26.5dBu
- Headroom, THD+Noise<1%, RTO +/-50mV typical
- Output DC Offset, 600Ω Rload 10KΩ
- Input Impedance 50Ω
- Output Impedance

+4 dBu to -10 dBV (XLR3-1 Input to RCA Phono Output)
Balanced to Unbalanced Direction

- Nominal input reference level +4 dBu (1.228Vrms)
- Nom. input ref. level channel to channel accuracy +/-1%
- Bandwidth DC-20Khz +0- 0.2dB
20kKhz-40Khz +0-1dB
75Khz -3dB
90dB
0.0005%
- Common Mode Rejection, Vcm+/-46.5V, Rs 0Ω -106dBu
- THD+Noise@1Khz, Rload 600Ω Vo=10Vrms +24dBu
- Noise Floor, 20Khz BW, RTO +/-2mV typical
- Headroom, THD+Noise<1%, RTO 24KΩ differential
- Output DC Offset, 10KΩ Rload 18KΩ common mode
- Input Impedance 600Ω user insertable
- Output Impedance 100Ω

Miscellaneous

- Unit Size 1.75" Height x 19.0" Wide x 3.5" deep
- Weight 4 pounds (3 Kg)

All specifications subject to change without notice. The information provided herein is believed to be reliable; however; Sonic Imagery Labs assumes no responsibility for inaccuracies or omissions. Sonic Imagery Labs does not warrant or authorize any Sonic Imagery Labs products for use in life support devices and/ or systems.



Sonic Imagery Labs Quality

Flexibility and overall construction quality are important elements, and depending on your application requirements may be key factors in your purchasing decision. Take your time and keep in mind your own personal requirements for a system. All Sonic Imagery Labs products are constructed with premium quality components to insure a long life of normal use, and to give you, the engineer or musician, the most versatile sound and support possible.

Ordering Information

part number = Model 898B-xxx-zzz

For 120Vac operation, add 001 in place of XXX in part number

For 220-240Vac operation, add 002 in place of XXX in part number

Balanced +4dBu input termination open, leave ZZZ blank in part number

Balanced +4dBu input termination 600 ohms, add 003 in place of ZZZ in part number

Balanced +4dBu input termination 2K ohms, add 004 in place of ZZZ in part number

Warranty

Sonic Imagery Labs warrants to the original purchaser of any Sonic Imagery Labs equipment, that the product is in working condition, according to its specifications at the time of shipment, for a period of three (3) years from the date of original manufacture. Should the equipment malfunction during the warranty period, Sonic Imagery Labs will at its discretion repair or replace the equipment upon receipt with an equivalent. Any replaced parts become property of Sonic Imagery Labs. This warranty does not apply to the software component of the product or a product which has been damaged due to accident, misuse, abuse, improper installation, usage not in accordance with product specifications and instructions, natural or personal disaster, or unauthorized alterations, repairs or modifications.