



5 January 2005 – This contact update page has been added to the Acrobat document you have downloaded. Please disregard any contact information printed within the document.

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Note: Repairs and packages should be shipped to Suite 202

UNPACKING

Carefully unpack your unit and inspect it for damage. If it is damaged, notify the carrier and White Instruments immediately. The carton should contain the following items:

1. The 4828 unit.
2. Four rack mounting screws.
3. One warranty registration card.

After unpacking, fill in the warranty registration card and mail it to White Instruments.

QUICK START

If you are familiar with sound system connections and would like to get your equalizer into service without reading the manual, follow the steps below.

1. Using the 4 mounting screws provided, mount the unit into your rack.
2. Connect the input for either balanced or unbalanced operation using either the XLR or 1/4" TRS sockets.
3. Connect the output for either balanced or unbalanced operation using either the XLR or 1/4" TRS sockets.
4. Set the gain control to its minimum setting and plug the unit into an appropriate 115 or 230 VAC 50/60Hz electrical outlet.

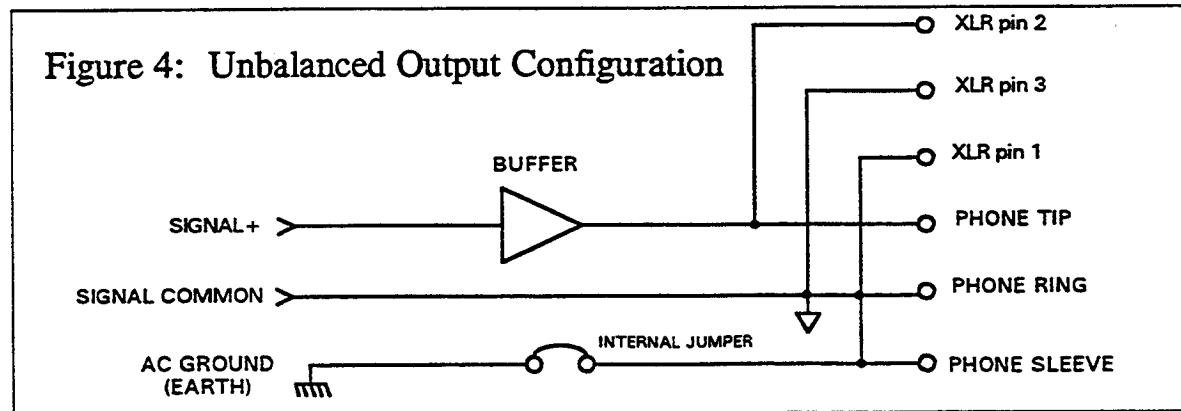
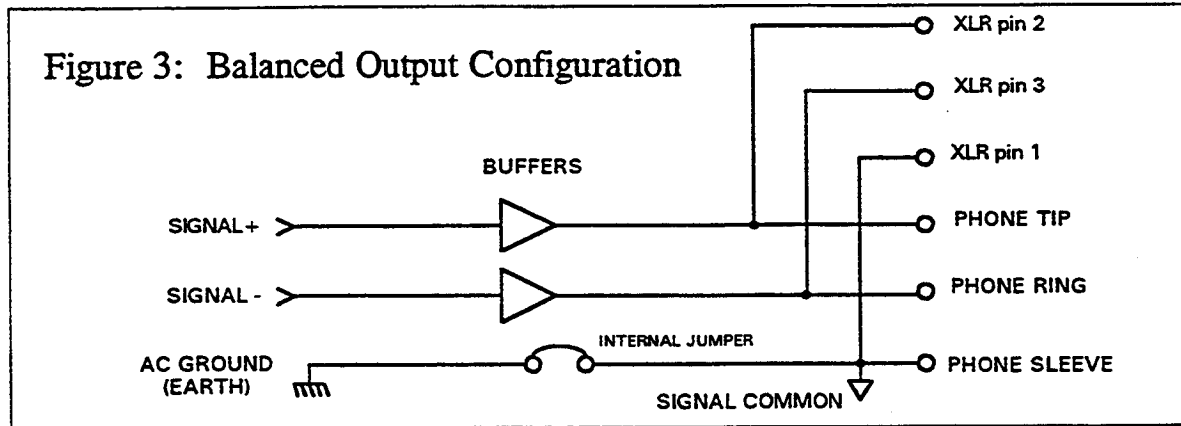
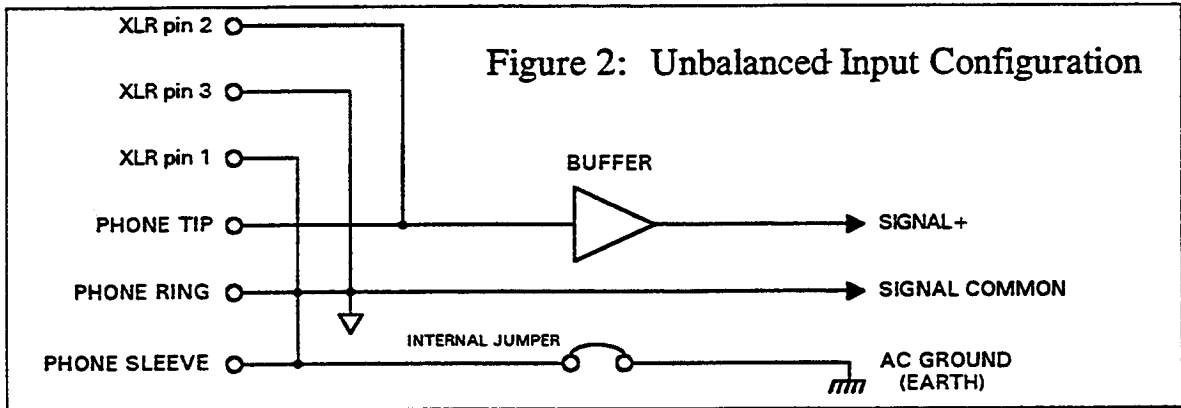
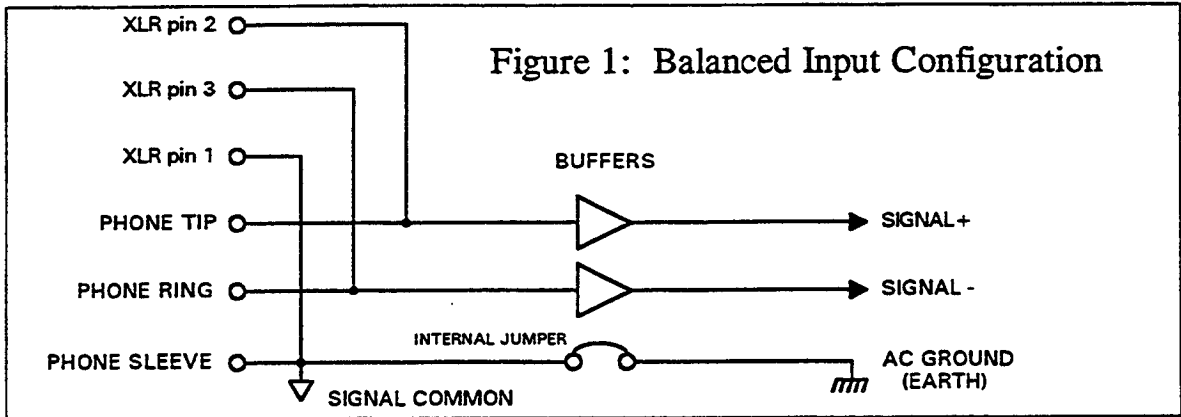
SOUND SYSTEM CONNECTIONS

Balanced/Unbalanced Operation

Balanced audio signal connections are used when audio equipment must be operated in high EMI (electromagnetic interference) environments. They can prevent interference signals such as those from power transformers or motors from contaminating an audio signal.

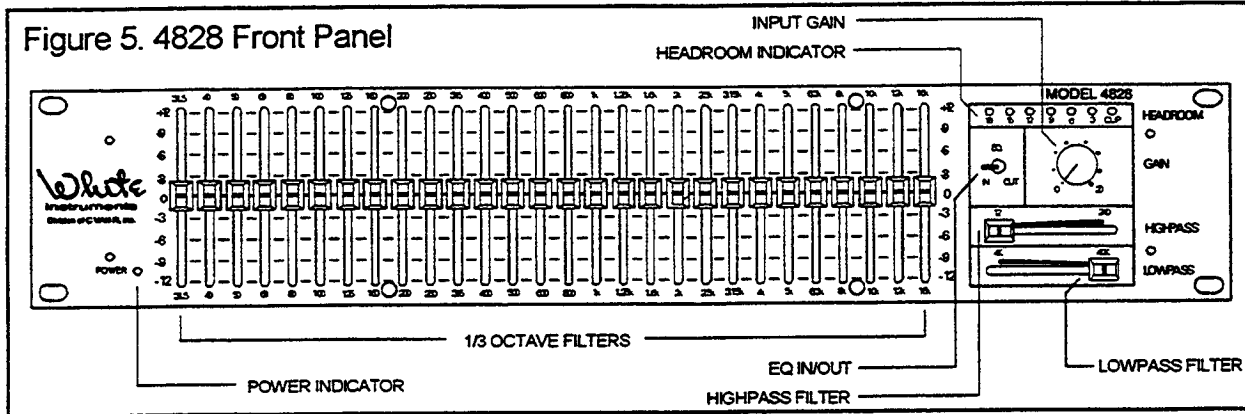
A balanced circuit is made up of three parts: the driving circuit, the connecting cable and the receiving circuit. All three must be balanced in order for a system to be balanced. The 4828 has electronically balanced inputs and outputs. In order to maintain a balanced audio system, the devices before and after the 4828 in the signal chain must be balanced. In addition, the cables between the devices must be properly configured. Figures 1 through 4 illustrate the correct method for making balanced and unbalanced connections. For balanced connections, it is common practice to use a 2-conductor shielded cable without the signal common connection. In this situation, both driving and receiving devices are referenced to earth ground via their chassis with the cable shield tied to chassis ground at one end and left unconnected at the other.

Note: The 4828 units are factory set with circuit common internally tied to chassis ground. If it is desired to isolate earth ground from chassis, the internal jumper labeled "E1" located on the main circuit board near the power supply must be clipped out.



FRONT PANEL CONTROLS

The front panel of the 4828 is shown in the following figure.



EQ Filters

The 4828 has 28 1/3-octave filters, centered on I.S.O. frequencies from 31.5 Hz to 16 kHz. Each filter level has a +/-12 dB range and is actuated by a 60 mm linear control.

Variable Highpass Filter

The 4828 variable highpass filter ranges from 12 Hz to 240 Hz. It is actuated by a horizontally oriented 45 mm linear control.

Variable Lowpass Filter

The 4828 variable lowpass filter ranges from 4 kHz to 40 kHz. It is actuated by a horizontally oriented 45 mm linear control.

Input Gain

The 4828 rotary input gain control ranges from 0 to 20 dB.

EQ In/Out Switch

The 4828 EQ in/out toggle switch bypasses only the EQ filters when in the "out" position. Input and output buffers, as well as the highpass and lowpass filters, remain in the circuit.

Headroom Indicator

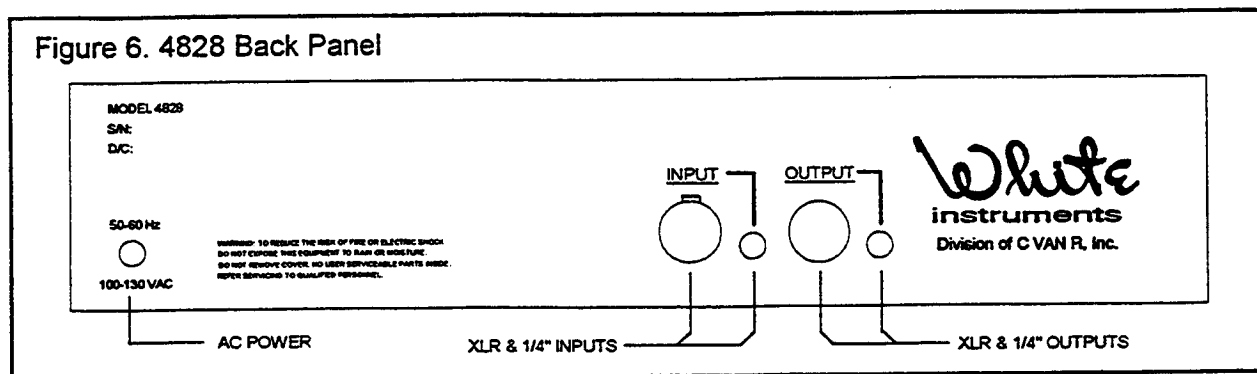
The 4828 has a 7 LED multicolored bargraph display which indicates available signal headroom before clipping.

Power Indicator

The 4828 green power LED lights when power is on.

REAR PANEL CONNECTORS

The 4828 back panel is shown below in Figure 6.



Analog Inputs and Outputs

The 4828 has redundant 3-pin XLR and 1/4" TRS phone jacks for both inputs and outputs.

AC Power

The 4828 internal power supply is factory set for operation at either 115 or 230 VAC @ 50-60 Hz. The unit is protected by an internal 250mA slow-blow fuse.

FEATURES AND OPERATION

The 4828 incorporates the following features into a 2-rack space device.

EQ Filters

- ◆ 28 filters on 1/3-octave I.S.O. centers.
- ◆ Level range +/- 12 dB .
- ◆ 2-pole MFB filter design, +/-3% frequency tolerance.

Variable Highpass Filter

- ◆ Frequency continuously variable, 12 Hz - 240 Hz.
- ◆ Butterworth, 12 dB/octave design.

Variable Lowpass Filter

- ◆ Frequency continuously variable, 4 kHz - 40 kHz.
- ◆ Butterworth, 12 dB/octave design.

Input Gain

- ◆ Gain continuously variable, 0 - 20 dB.

EQ Bypass

- ◆ Switch only bypasses EQ filters -- gain, highpass and lowpass are not affected.

Headroom Indicator

- ◆ 7-multicolor (green, yellow, red) LED bargraph display.
- ◆ 18 dB range, 3 dB resolution.

Automatic Bypass Relay with Power-Up Delay

- ◆ Sealed reed relays for reliability.
- ◆ Automatic and instantaneous hardwire bypass when power off.
- ◆ Delayed actuation at power-up (prevents "popping" in speakers at turn-on).

SYSTEM SET-UP

In order to obtain the maximum performance from your **4828** unit, follow these suggestions.

1. Connect the **4828** to the rest of the sound system as explained in the **Quick Start** section at the beginning of this manual.
2. Set the input gain of the **4828** to optimize the dynamic range.
 - a. Turn off all power amplifiers driven by the **4828**.
 - b. Send program material at the maximum anticipated level into the **4828**.
 - c. Set the **4828** gain control such that the headroom indicator shows occasional signal peaks in the red region.
 - d. While still passing program material through the **4828**, adjust all power amplifiers to their minimum gain setting and turn them on. Adjust the amplifier gains until the desired output signal level is reached.

SPECIFICATIONS

Frequency Range:
20 Hz (-1 dB) - 20 kHz (-0.5 dB).

Maximum Operating Level:
+21 dBu into 600 Ω .

Dynamic Range:
109 dB.

Distortion:
< 0.02% into 600 Ω , 20Hz - 20kHz.

EQ Filters:
1/3-octave MFB design on ISO centers, +/-12 dB range, 60 mm travel.

Low Pass Filter:
Butterworth, 12 dB/octave, continuously variable, 4 kHz - 40 kHz.

High Pass Filter:
Butterworth, 12 dB/octave, continuously variable, 12 Hz - 240 Hz.

Input Gain:
0 - 20 dB, continuously variable.

Headroom indicator:
Multicolor 7 LED bargraph, 3 dB resolution.

Input Impedance:
50 k Ω balanced, 25 k Ω unbalanced.

Input Circuit:
Active servo-balanced. Can operate unbalanced with no gain change.

Output Impedance:
100 Ω balanced, 50 Ω unbalanced.

Output Circuit:
Active servo-balanced. Can operate unbalanced with no gain change.

Connector Types:
Input/output - redundant XLR and 1/4" TRS.

Power Requirements:
90-130/180-260 VAC, 50/60 Hz, 15Watts, fuse: 250 mA, 1.25", slow-blow.

Mechanical:
3.5"(8.9cm) x 19"(48.3cm) x 9.2"(23.4cm), 7lbs (3.2kg), rack mount.

WARRANTY POLICY

Your White Instruments 4828 is warranted against defects in manufacturing, workmanship and original components for a period of ONE YEAR from the date of purchase. During this period, White Instruments will repair or replace the unit, at our option, so long as it has not been subjected to abuse. Abuse may be physical and/or electrical in nature. White Instruments will be the sole judge of this criteria.

White Instruments is the only warranty repair facility in the United States. Outside the United States, White Instruments distributors are authorized to make warranty repairs.

Warranty Repairs

Your unit should be securely packed and shipped, prepaid, to White Instruments or one of its authorized offshore distributors. A return authorization is required.

Our U.S. shipping address may be found on the front of this manual. Contact the factory for the name and address of the offshore distributor nearest you. A copy of your sales receipt should be included to establish the warranty date.

A letter detailing the unit's malfunction, with your name, shipping address and telephone number, must be included. Every effort will be made to complete repairs within 5 working days. Your unit will be returned to you via surface freight, prepaid. If you instruct us to return your unit via air freight, it will be shipped with freight charges collect.

Out-of-Warranty Repairs

Your unit should be securely packed and shipped, prepaid, to White Instruments or one of its authorized offshore distributors. A return authorization is required.

Should the required repairs not be covered under warranty, you will be charged for parts, labor and freight. Should you require an estimate prior to repairing the unit, you should notify White Instruments of this when returning the unit. Every effort will be made to complete the repair within 5 working days. The unit will be returned C.O.D. unless otherwise instructed.