HRS-1S

Half Rack Analog Stereo Audio Speaker Monitor

User Guide

Part Number 821535, Revision E

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HRS-1S User Guide

Introduction

Overview

The HRS-1S audio monitor provides self-powered, fidelity monitoring in the very smallest rack space possible. The HRS-1S contains two high performance transducers driven by two separate power amplifiers. One amplifier/driver combination handles midrange and high frequency information, while the other channel reproduces information below the 500 Hz crossover point. Stereo signals are summed to the midrange/woofer combo for reproduction through the monaural speaker system, while the full dual channel signal is sent to a headphone output for full stereo (left and right channel) monitoring.

Topics

Safety Instructions

1. Read, keep, and follow all of these instructions; heed all warnings.

2. Do not use this equipment near water.

3. Use only a dry cloth to clean the equipment.

4. Do not block any ventilation openings. Install only in accordance with the instructions in the section entitled, "Installation Recommendations" on page 3.

5. Do not install near any heat source such as a radiator, heat register, amplifier, or stove.

6. Do not expose the equipment to rain or moisture.

7. Do not attempt to plug the unit into a two-blade outlet (with only two prongs of equal width).

IMPORTANT: By design, these monitors will only plug into a three-prong outlet for your safety. If the plug does not fit into your outlet, contact an electrician to replace the obsolete outlet.

8. Protect the power cord from being walked on or pinched, particularly at plug's source on the equipment and at the socket.

9. Use only the attachments/accessories specified by the manufacturer.

10. Unplug the equipment during lightning storms or when unused for long periods of time.

11. Refer all servicing to qualified service personnel. Servicing will be required under all of the following conditions:

    *   The equipment has been damaged in any way, such as when the power-supply cord or plug is damaged.

    *   Liquid had been spilled or objects have fallen onto the equipment.

    *   The equipment has been exposed to rain or moisture.

    *   The equipment does not operate normally.

    *   The equipment has been dropped.

Installation Recommendations

Mounting

The unit is designed to install into a standard 19" rack mounted at eye level for best audio monitoring. Three rack mount kits are available depending on your needs:

Part Number	Half-Rack Mounting Hardware Kits
RE-1	Center Mount Kit
RE-2	Side Mount Kit
RE-3	Side-by-Side Mount Kit

Heat Dissipation

The ambient temperature inside the mounting enclosure should not exceed 40° Celsius (104° Fahrenheit). Adjacent devices can be rack mounted (or stacked) in proximity to the unit if the above temperature is not exceeded. Allow a 1RU (1.75"/44.45mm) space above and below the unit for air circulation.

Power

The unit comes with a standard 24VDC/3.0A external power supply that connects to an A/C mains power source (100 to 240 VAC, 50/60Hz) using an IEC power cord.

3

Description

The HRS-1S comes equipped with a ganged stereo volume control, power indication LED, stereo/mono toggle switch, and headphone output. Output limiter circuits are incorporated to protect the speakers, and extensive magnetic shielding allows placement immediately adjacent to video monitors with no color impurities.

The HRS-1S features one pair of balanced XLR inputs and one pair of XLR loop-through connectors for connecting to downstream equipment.

Features

- 95 dB SPL at two feet

- Only one rack space high and one half-rack wide

- Excellent high frequency response for positive detection of background whine and noise

- Audible indication of phase/polarity problems

- Thorough magnetic shielding for placement next to video monitors

- Quick and easy installation: simply slide in the rack and connect audio and AC power adapter

- Stereo inputs summed to the monaural midrange/woofer speaker system

- Full stereo monitoring through the headphone output

- Two analog inputs on balanced XLR connectors

- Two analog loop-through outputs on balanced XLR connectors

- Stereo/mono toggle switch on front panel

- Green power indication light and volume control on front panel

Specifications

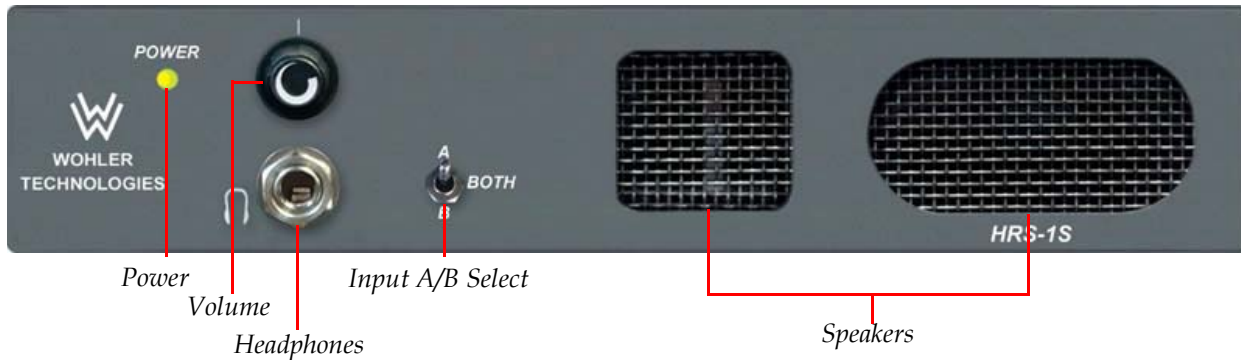The specifications of the HRS-1S are listed below.

Table 1–1   HRS-1S Specifications

Specification	Domain Range
Input Impedance	40K Ω (balanced)
Input Level for Maximum Output (Volume Full On)	0 dBv balanced; +10 dB unbalanced
Input Overload	+26 dBv balanced; +14 dBv unbalanced
Peak Acoustic Output (at 2 ft.)	95 dB SPL
Response (6th Octave)	80 Hz - 16 kHz ± 7 dB (-10 dB @ 50 Hz, 22 kHZ)
Power output RMS Mid-Range RMS Bass	 10 W transient / 5 W continuous 20 W transient / 10 W continuous
Distortion, Electrical	Less than 0.15% at any level below limit threshold
Distortion, Acoustic	8% or less at worst case frequencies above 180 Hz including cabinet resonance; typically less than 2%
Hum and Noise	Better than -68 dB below full output
Magnetic Shielding	Less than 1 Gauss any adjacent surface
Input Connectors	Balanced: XLR
Power Consumption (Average Maximum)	35 W
AC Mains input:	100-240VAC, 50-60 Hz
Dimensions (H x W xD)	1.75 x 8.5 x 7.5 inches 44.5 x 216 x 190 mm
Weight:	7 lbs. (3.2 kg)

Note: All of the specifications listed above are subject to change without notice.
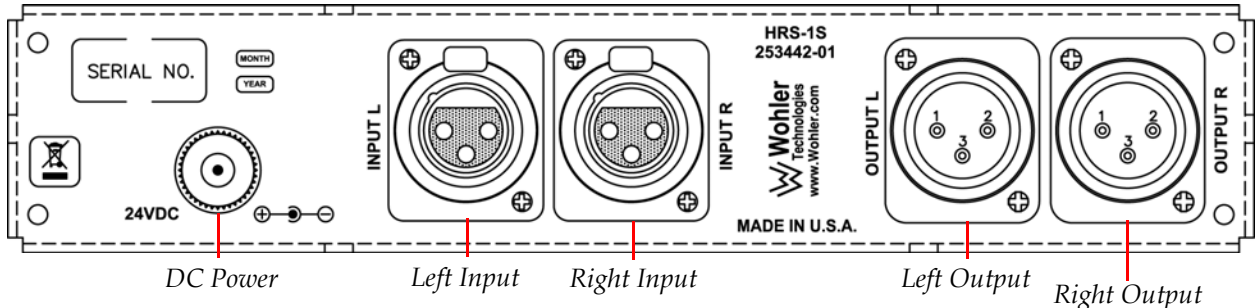
Front Panel Features

Figure 1–1   Front Panel Features

Power
Volume
Input A/B Select
Headphones
Speakers

- **Power Indication** (Green LED): This LED glows green to indicate the HRS-1S is connected to operational mains power.

- **Headphone Output** (1/4" Jack): For full stereo monitoring use the headphone output feature. Note that in order to monitor the audio in stereo through the headphones you will need to place the A/B select switch to both. When you plug in headphones, the internal speakers will mute. This jack accepts a standard 1/4" phone type stereo plug.

- **Volume Control** (Rotary Pot): This controls the loudness of the audio reproduced by the internal speakers or connected headphone. Clockwise rotation of this control increases the loudness of the monitored audio.

- **A/B Select** (Three-Position Toggle Switch): Use both to sum the two channel stereo signals together, or A (or B) to select only one channel for monaural monitoring through the speakers or headphones. Note that this switch has no effect on the line output.

- **Speakers**: The HRS-1S internal speaker system is comprised of one mid-range/tweeter speaker and one woofer speaker. The mid-range speaker reproduces only the mid and high frequencies, while the woofer speaker reproduces the low frequencies. The two channels of the stereo input signal are summed together into a monaural signal for reproduction from the speaker system.
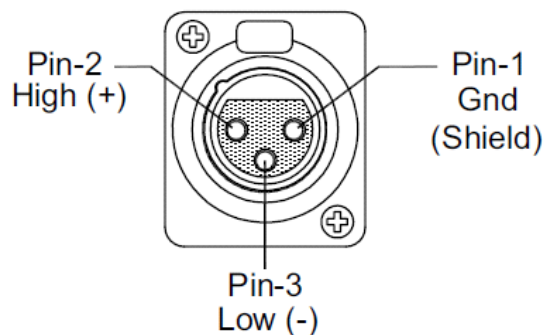
Rear Panel Connectors

Figure 1–2   Rear Panel Connectors

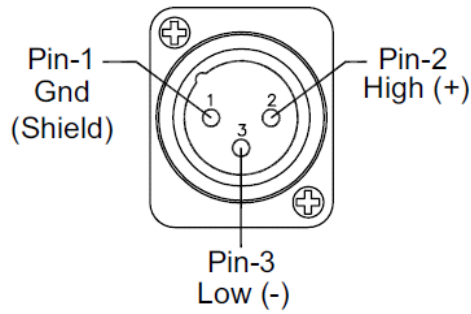*DC Power   Left Input   Right Input   Left Output   Right Output*

- **Power** (External Power Supply Connector): Attach the supplied 24 VDC power supply module between this connector and mains power (100 - 250VAC, 50/60 Hz). The front panel power LED will glow green to indicate operating voltages are present.

- **Balanced Inputs** (L and R - Three-Pin Female XLR Connectors): These two balanced XLR connectors (left and right) accept standard analog audio signals. Pinout information for connectors is shown below.

Figure 1–3   Female XLR Pin-Out

- **Loop-Through Outputs** (L and R - Three-Pin Male XLR Connectors): These two XLR connectors output a balanced analog audio loop-through of the signals entering the balanced inputs Pinout information for connectors is shown below.

Figure 1—4　　**Male XLR Pin-Out**

Technical Functional Overview

Figure 1–5 illustrates the functionality of the HRS-1S.

Figure 1—5　　**HRS-1S Block Diagram**