

AD2002

Digital Stereo Power Amplifier

FEATURES:

MAIN / INTERRUPT priority input switching
Auxiliary line output
Speaker A/B switching
Front panel Level and Balance Trim controls
Independent rear mounted Main Level controls
High Level inputs
Digital Optical line input (PCM 2 Channel Decoding)
Multi-function IR remote control
Signal sensing "Power On" and Trigger mode
Rear mounted treble and bass controls
Rack mountable (rack ears included)

Congratulations on your purchase of the AudioSource® AD2002. Please take a few moments to read this entire manual, and be sure to retain this document for future reference. Please read and observe all safety instructions detailed on page 2.

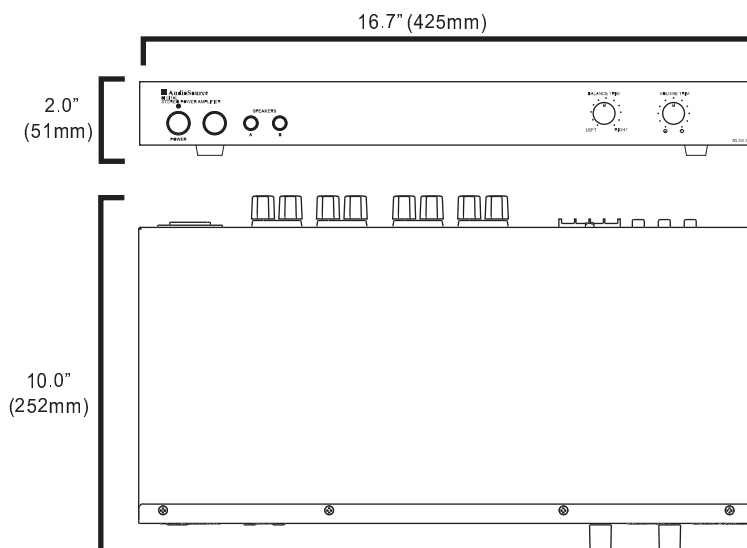
NOTE: If any part of this product is damaged or missing, please call your dealer or AudioSource® directly at 1.877.715.5439 or 503.914.4688.

Please read your warranty and retain your receipt and original carton for possible future use.

For more information about AudioSource® electronics, speakers and accessories please visit www.audiosource.net

SPECIFICATIONS

Stereo (8 ohm):	100W per channel, <0.2% THD+N
Stereo (4 ohm):	225W per channel, <0.2% THD+N
Bridged Mono (8 ohm):	450W, 1kHz, <0.2% THD+N
Frequency Response:	20Hz ~ 20kHz
Signal to Noise Ratio:	100dB referenced to .2% THD+N @ 8 ohms w/20kHz Lowpass filter
Channel Separation:	60dB @ 1kHz, referred to 100W output into 8 ohms
Input Sensitivity:	Variable, 350mV to 2.8V for rated power into 8 ohms
Bass/Treble Control:	+/- 12dB @ 100Hz and 10kHz
AC Power Consumption:	550W maximum
Net Weight:	7.5lbs / 3.4kgs
Gross Weight:	10lbs / 4.5kgs





CAUTION

RISK OF ELECTRICAL SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL!

EXPLANATION OF SAFETY SYMBOLS



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.




The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products' enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

IMPORTANT SAFETY INSTRUCTIONS

- WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL NOT BE PLACED ON APPARATUS.
- WARNING: TO PREVENT FIRE OF SHOCK HAZARD, DO NOT USE THIS PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.
- WARNING: THE MAINS PLUG IS USED AS DISCONNECT DEVICE. THE DISCONNECT DEVICE SHALL REMAIN READILY AVAILABLE.
- WARNING: ONLY USE ATTACHMENTS OR ACCESSORIES SPECIFIED OR PROVIDED BY THE MANUFACTURER.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. The ventilation should not be impeded by covering the ventilation openings with items such as newspaper, tablecloths, curtains etc. Install in accordance with the manufacturer's instructions.
8. Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. No open flame sources, such as lighted candles, should be placed on the apparatus.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point of exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
16. WARNING: The mains plug/appliance coupler is used as disconnect device, the disconnect device shall remain readily operable.
17.  This equipment is a Class II or double insulated electrical appliance. It is designed in such a way that it does not require a safety connection to electrical earth.



18.
 - This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
 - Warning: to reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.
 - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

MAGNETIC FIELD: !!CAUTION!! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field, which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit. If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

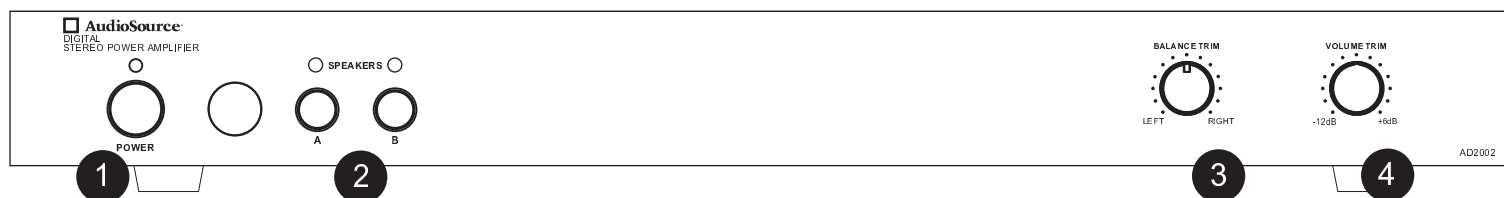


Figure 1. Front Panel

FRONT PANEL CONTROLS

- Power Switch**
Switches the AD2002 on or off. A blue LED indicates the power is "ON". If the LED is lit purple, the rear panel "Power Mode Switch" is switched to either "Auto" or "Trigger" and waiting for a signal. If the LED is red, the Amplifier is in protection mode; cycle power switch to reset.
- Speaker Selector**
Selects speakers A or B. For A + B speakers, push both buttons in.

- Balance**
Fades speaker output between the Right and Left Channels
- Volume Trim**
This rotary encoder adjusts amplifier volume from -12dB to +6dB relative to the Level Controls on the back panel. This rotary encoder is a digital control and functions in parallel with the unit's remote control. It will freely spin continuously. **Note:** each "click" felt when this control is turned will represent a 1 dB change in volume.

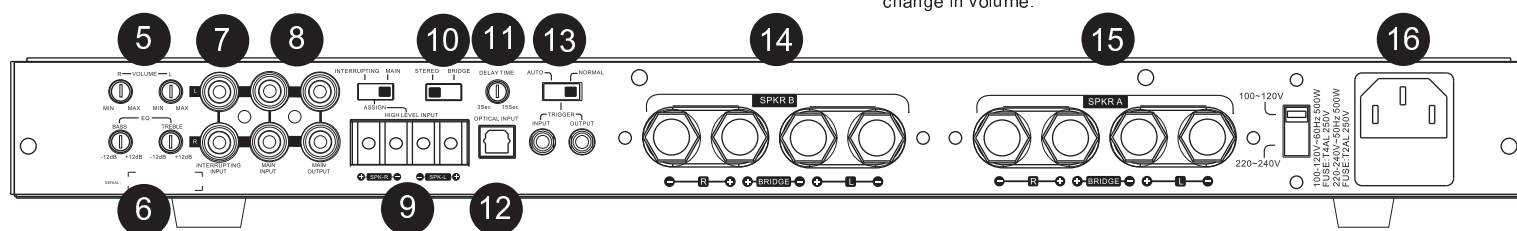


Figure 2. Rear Panel

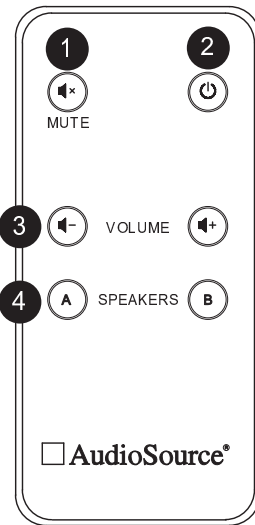
REAR PANEL CONTROLS

- Master Volume Controls**
Provides independent adjustment of Left and Right channel maximum level.
- Bass and Treble Controls**
These controls can adjust bass and treble frequencies +/- 12dB at 100Hz and 10kHz.
- Interrupting Line Input**
This is the secondary input, use MAIN IN for your main input. INTERRUPTING INPUT can be used if a second source is desired and takes over when signal is present and has at least a 10mV level. When there is no signal, or a signal with less than 10mV level, the amp switches back to MAIN IN after a brief delay (delay can be set by the "Delay Time" control).
- Main Input/Output**
MAIN IN should be used as the "primary" or main input for the amplifier. Connect your receiver or main source to this input. Use MAIN OUT to pass MAIN IN signal to another amplifier.
- Speaker Level Input/Speaker Level Input Line Select**
Can be used to connect a source with speaker level output instead of line level outputs. Use the Speaker Level Input Line Select to route the source to either Main Input or Interrupt Input function.
- Mode Select Switch**
Switches the amplifier from Stereo mode to Bridged mode.
STEREO MODE
If you will be connecting one or two pair of speakers to the amplifier, place the switch in the "Stereo" position. **NOTE:** For playing 2 pairs of speakers (A plus B), make sure each speaker has an impedance of 8 ohms or greater.
BRIDGED MODE
When set to "Bridged" mode, the amplifier is a single channel mono amplifier.
BRIDGED MODE- MONO APPLICATION
For bridged mode, playing Right and Left together as mono output, use a Y cable adapter to connect Right and Left RCA signal to the Right (Red) input at MAIN IN. Set the MODE switch to BRIDGED and follow the instructions for bridged speaker connection in the SPEAKER TERMINALS section of this manual.
NOTE: The AD2002 supplies 450W in bridged mode, Please verify that your speakers are capable of handling such power to avoid possible damage!
- Delay Time**
Allows for a 3-15 seconds delay to be set when switching from the Interrupting and Main Input.
- Optical Input**
This input uses a fiber optic cable to transmit a digital signal to the amplifier. Use of this input is recommended for advanced users who are familiar with the audio source's OSD system. When using the Optical input, make sure the source unit the cable is plugged into is in **Digital PCM (2 Channel) Mode**. Please refer to your source's operating manual when using this input.
NOTE: Optical Input will not decode 5.1 or 7.1 signals; only Digital PCM signals.

- Power Mode Switch**
Selects between Auto, Trigger, and Normal Modes
AUTO
Turns the amplifier on when an audio signal of greater than 5mV is present at the Main Inputs. Please note the front panel Power switch must be on in this mode. With no signal present, amplifier will go to "Standby" mode after 7 minutes, and front panel LED will turn purple.
12V TRIGGER
Allows the AD3002 to be powered on by other electronics or to power on other electronics via a 3.5mm mini phone plug cable. Trigger can operate with voltages between 3 and 20 Vots DC. If no trigger signal is present, front panel LED will turn purple to indicate unit is in standby mode.
NORMAL
Amplifier is turned on and off by the front panel Power switch.
- Speaker B Output**
Speaker output terminals for output B. Minimum impedance: 8 ohm bridged or 4 ohm stereo.
- Speaker A Output**
Speaker output terminals for output A. Minimum impedance: 8 ohm bridged or 4 ohm stereo.
SPEAKER TERMINALS - STEREO MODE
For stereo output connect the speaker's positive (red) terminal to the amplifier's positive (red) terminal, and the speaker's negative (black) terminal to the amplifier's negative (black) terminal for each Right and Left speaker.
SPEAKER TERMINALS - BRIDGED MODE
Place the "MODE" switch in the "BRIDGED" position and use both red terminals to connect to the speaker. Connect the speaker's positive (red) terminal to the amplifier's red (+) terminal noted next to the bridging mark, and the speaker's negative (black) terminal to the amplifier's unmarked positive (red) terminal.
NOTE: Only one output (A or B) can be bridged. Do not attempt to bridge both A and B speaker terminals! This may result in a lower impedance than the amplifier is designed for and may damage your amplifier. The minimum impedance for the total load connected in bridged mode is 8 ohms.
NOTE: Use Class 2 wiring for speaker connections.
To wire the output connector: 1. Strip the insulation off each speaker wire to expose 3/8" (10 mm) of bare conductor. 2. Unscrew the output terminal binding post several twists, insert each wire into the correct terminal. 3. Tighten binding post by twisting clock-wise until it is firmly clamping the speaker wire.
Warning: While the amplifier does self-protect under most improper output conditions, misconfiguration of loudspeaker mode and incorrect connection of loudspeakers could damage connected loudspeakers and/or amplifier. Please refer installation to a qualified installation professional, and always check state and local electrical codes when installing.
- Mains Power Inlet & Fuse Holder**
Accepts IEC type line cord. A fuse located in the integrated holder provides safety protection from fault conditions: replace fuse with one of same type and rating only.

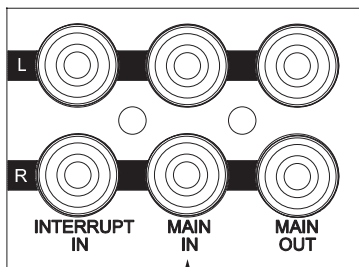
REMOTE

1. **Mute**
Press this button to mute the AD2002 output.
2. **Power/Standby**
Press this button to bring the AD2002 out of Standby Mode, or to put the Amplifier in Standby Mode.
3. **Volume +/- Controls**
Controls the Volume Trim of the Amplifier the same way the front panel Volume Trim does.
4. **Speaker A/B switch**
Controls A/B selection of the outputs; remotely turn on and off 2 separate sets of speakers.



STEREO SETUP

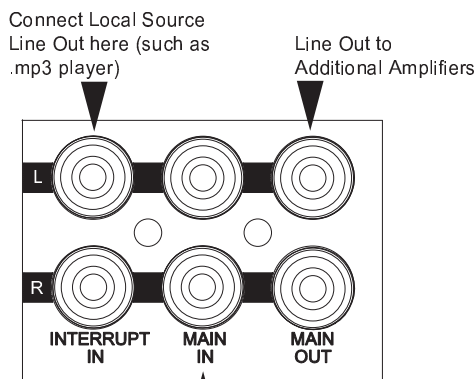
In this configuration, the mode switch is set to "Stereo". Connect the line out jacks from a stereo pre-amplifier or source to the MAIN input jacks of your AD2002. Next connect your speakers to the terminals marked "Speaker A" observing proper polarity. Select the "A" speakers using the front panel Speaker Selection buttons. Connect a second (optional) pair of speakers to the terminals marked "Speaker B". If you are connecting 4 speakers to the AD2002 they must be 8 ohm speakers only. Press A and B together to use both sets of speakers.



Use these Inputs to connect
Pre-amp or Receiver Line Out

SETUP FOR MULTIPLE SOURCE

In the multiple source set up, a distributed audio system is connected to the AD2002 as a local amplifier via the MAIN inputs. Normally the distributed audio system will be the audio source for the AD2002. The distributed audio is then passed on to be used by additional amplifiers in the distributed system via the MAIN outputs.



Use these Inputs to connect
Pre-amp or Receiver Line Out

The audio output of a local source, such as an MP3 Player, CD, television, computer, etc., is connected to the AD2002 via the INTERRUPTING inputs, and whenever the local source is active its signal will take priority over the distributed audio signal present at MAIN input. However, the distributed audio signal will still be present at the MAIN input. In this circumstance the audio output of the local source will be heard via the AD2002. Once the local source is turned off or muted, the AD2002 will automatically switch back to the distributed audio system as an audio source, assuming the local source remains inactive. There is a delay ranging from 3 to 15 seconds (based on the "Delay Time" setting) when switching from INTERRUPTING input back to MAIN inputs.

A Note On Distortion

Digital amplifiers distort differently than conventional Class A/B amplifiers. If you hear a clicking or popping sound at high volume levels, this is an indication the AD2002 is distorting. Pushing the amplifier harder than the distortion level may trigger the amplifier's protection circuitry which will turn the output of the amplifier off and engage the red protection LED. If this occurs, you can reset it by cycling the power button. The AD2002 is designed to exceed all power levels stated in this manual by a good margin, so if the amplifier is distorting or its output protection is engaging, reduce the volume using the rear panel Level Controls.

Impedance Matching Volume Controls

When using Impedance Matching Volume Controls (such as the AudioSource AE100VC), please ensure the switch setting is correct for the number of Volume Controls used. Mis-matching the control can lead to amplifier shutdown. In addition, if the amplifier shuts down momentarily at high volume levels, the maximum wattage is being exceeded by the amplifier and the volume should be reduced. If clicking or popping sounds come from the speakers at high volume, reduce the volume as this is an indication that the amplifier is clipping and at maximum volume.

Using the Rear Level/Front Volume Trim

The AD2002 has rear mounted master level controls and a front panel volume trim control. This setup is intended to allow the user to set a "do not exceed" volume level. To do so, start with the rear panel level controls at minimum. Turn the front panel Volume Trim control to maximum and play music from the chosen source. Slowly turn up the rear panel level controls to the maximum volume needed. Next, turn the front panel volume trim control down (counter-clockwise) by 6 to 10 "Clicks" (each click is a 1dB adjustment). This will allow the front panel volume trim to adjust the output volume by a range of 18dB.

Limited Warranty

AudioSource® warrants its amplifier products against defects in materials and workmanship for a limited period of time. For a period of two years from date of original purchase, we will repair or replace the product, at our option, without charge for parts and labor. Customer must pay all parts and labor charges after the limited warranty period expires. The limited warranty period for factory refurbished products expires after ninety (90) days from date of original purchase.

This limited warranty applies only to purchases from authorized AudioSource® electronics retailers. This limited warranty is extended only to the original purchaser and is valid only to consumers in the United States.

Consumers are required to provide a copy of the original sales invoice from an authorized AudioSource® dealer when making a claim against this limited warranty. This limited warranty only covers failures due to defects in materials or workmanship that occur during normal use. It does not cover failures resulting from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, service by anyone other than AudioSource®, or damage that is attributable to Acts of God. It does not cover costs of transportation to AudioSource® or damage in transit. The customer should return his defective product, freight prepaid and insured, to AudioSource® only after receiving a Return Authorization.

This warranty will become void if the serial number identification has been wholly or partially removed, altered or erased. Repair or replacement under the terms of this warranty does not extend the terms of this warranty. Should a product prove to be defective in workmanship or material, the consumer's sole remedies will be repair or replacement as provided under the terms of this warranty. Under no circumstances shall AudioSource® be liable for loss or damage, direct, consequential or incidental, arising out of the use of or inability to use the product. There are no express warranties other than described above.