



Owner's Manual

SA-3

Three-Channel System Amplifier



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DOCUMENT CONVENTIONS

This document contains general safety, installation, and operation instructions for the Wisdom Audio SA-3 Amplifier. It is important to read this document before attempting to use this product. Pay particular attention to:

WARNING: Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.

CAUTION: Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage to or destruction of part of or the entire product.

Note: Calls attention to information that aids in the installation or operation of the product.



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

DANGER:



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

IMPORTANT



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

Marking by the “CE” symbol (shown left) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.



Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help



Important Safety Instructions

Please read all instructions and precautions carefully and completely before operating your Wisdom Audio equipment.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this equipment near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
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 of the third prong is provided for your safety. If the provided plug does not fit into your socket, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. ALWAYS disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
15. NEVER operate this product with any covers removed.
16. NEVER wet the inside of this product with any liquid.
17. NEVER pour or spill liquids directly on to this unit.
18. NEVER bypass any fuse.
19. NEVER replace any fuse with a value or type other than those specified.
20. NEVER operate this product in an explosive atmosphere.
21. ALWAYS keep electrical equipment out of the reach of children.



Unpacking the SA-3

The Wisdom Audio SA-3 amplifier is a substantial piece of equipment. Please exercise caution when unpacking your SA-3 to ensure that you do not strain yourself from its (perhaps unexpected) weight.

CAUTION

Do not attempt to lift your SA-3 while bending or twisting from the waist. Use your legs for lifting, not your back.

Always stand as straight as possible and keep the SA-3 close to your body to reduce strain on your back.

After unpacking your SA-3, keep all packing materials for future transport. If you need to ship your SA-3, only the original, purpose-designed shipping carton is acceptable. Any other method of shipping this product runs a significant risk of damage to the SA-3; damage that would not be covered by the warranty.

Carefully inspect your SA-3 for possible damage due to shipping. If you discover any, contact your Wisdom Audio dealer immediately.

Placement Considerations

PRECAUTION

For your protection, review “Important Safety Instructions” and “Operating Voltage” before you install your SA-3.

Note that adequate clearance for the AC cord and connecting signal cables must be left behind your SA-3. We suggest leaving at least six inches (15 cm) of free space behind your SA-3, so all cables have sufficient room to bend without crimping or undue strain.

If possible, the SA-3 should also be placed in such a way that the power switch on the rear panel is easily accessible. This switch disconnects power from the unit completely, resulting in effective disconnection of the SA-3 from the AC mains. You might think of this as a “vacation switch”, should you wish to turn off your system completely when you will be away from home for a prolonged period. Just remember to turn it back on again when you return.



Ventilation

Your Wisdom Audio SA-3 has relatively modest ventilation requirements, thanks to its remarkably efficient design. Typically, it becomes only modestly warm during normal operation. Still, please be certain to keep the vents on the sides of the amplifier clear of any obstruction. (The rack mount attachments have corresponding vents.)

Mechanical drawings are included in this manual to facilitate special installations where necessary (see “Dimensions” at the end of this manual).

Operating Voltage

For compatibility with existing household outlets, a standard three prong, 20-ampere plug is provided on the removable, IEC-standard AC mains cable.

The Wisdom Audio SA-3 may be set for 100V, 120V, or 230V/240V AC mains operation. Outside the United States, and depending on local electrical codes and regulations, the AC mains cord may need to be replaced with one that conforms to local plug/outlet standards.

NOTE: The AC receptacle employs a 20-amp IEC-standard socket (not the more common 15-amp IEC socket).

The operating voltage of the SA-3 may not be changed by the user. Your amplifier has been preset at the factory for the voltage of the country for which it was built. If you move to a country with a different AC mains voltage, please contact your local Wisdom Audio distributor or Wisdom Audio for assistance.

CAUTION! Always make certain the SA-3 is set to the correct voltage *before* connecting it to AC mains power! Failure to do so can severely damage the unit and void the warranty.

This power amplifier has an extremely large power supply, and consequently includes a special protection circuit that protects your AC mains circuit from excessive in-rush currents when power is applied to the unit.

CAUTION! Please allow thirty seconds between turning the unit On and Off, or toggling between Operate and Standby, to ensure that the in-rush protection circuit has an opportunity to reset itself properly.



Failure to observe this procedure may result in nuisance tripping of the AC mains supply's circuit breaker. If this should happen, disconnect the amplifier, reset the AC mains supply's circuit breaker, and wait for two minutes before re- connecting the amplifier to the AC mains.

Front Panel

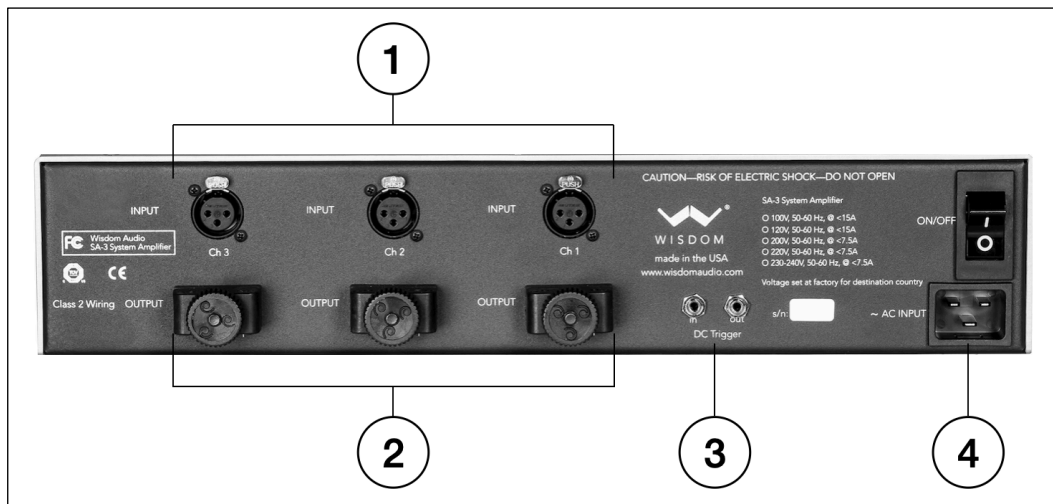


- 1. Power Switch and Indicator:** The SA-3 features a sculpted front panel that conceals a switch under the flexible left end of the middle section. Gently pressing the left end of the center section will engage a micro switch under the face of the SA-3, which will in turn toggle the unit between operate and standby. The international symbol for power is inscribed in this location to designate its purpose. There are three normal states for the lit indicators:
 - Lit amber LED on left side indicates the unit is receiving power and is in **standby**
 - Lit blue channel status indicators indicate the unit is receiving power and is fully **on**
 - If both the amber and blue LEDs are off, **no power** is being supplied to the amplifier
- 2. Channel Status Indicators:** These three LEDs provide visual confirmation of the operational status of the three channels in your SA-3. Any faulty condition that causes an individual amplifier channel to shut down (for example, a short-circuited speaker wire) will result in the LED indicator for that channel blinking to notify you of a problem. If one or more indicators are blinking, turn off the amplifier and completely disconnect the speaker wires for the offending channel. (The LEDs are arranged on the front as the



channels are arranged on the back, as seen from the front.) Turn the amplifier back on and check the status indicator. If it is still blinking, there is likely an internal problem within the SA-3. Please contact your local Wisdom Audio dealer or Wisdom Audio's Technical Service department for assistance. If removing the speaker wires from the offending channel appears to solve the problem; check the DC resistance across the speaker leads you disconnected. It should read several ohms (the exact number varies a bit by model). If the DC resistance is under 1Ω , carefully check all the connections to make sure no speaker wires are touching each other or shorted out in case their insulation has been damaged. If yours is a custom installation with wires that are run in the walls, you should probably call your Wisdom Audio dealer for assistance trouble-shooting the installation.

Rear Panel



CAUTION! Turn off the SA-2 before attempting to make or change any connections.

1. Balanced Audio Inputs

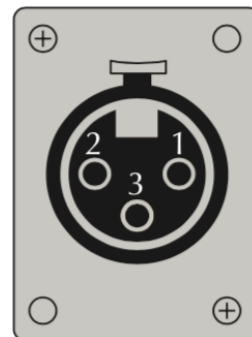
The pin assignments of this XLR-type female input connector are:

Pin 1: Chassis ground 1

Pin 2: Signal + (non-inverting)

Pin 3: Signal – (inverting)

Connector ground lug: chassis ground



These pin assignments are consistent with the standards adopted by the Audio Engineering Society



2. Speaker Output Terminals

The Wisdom Audio SA-series amplifiers are equipped with high-current binding posts for output termination to the loudspeaker system. To take full advantage of the amplifier's sonic quality, we recommend using high-quality speaker cable; please see your Wisdom Audio dealer.

CAUTION!

Never connect a power amplifier's output terminals to any device other than a loudspeaker.

Never short-circuit the amplifier's output terminals.

Never connect the output terminals of one amplifier to the output terminals of another amplifier.

Each channel of the SA-3 system amplifier has a single, patented Cardas speaker terminal for making the speaker wire connections. This system uses a single large knob to tighten down on both positive + and negative – connections at once, without any need for tools.



The unique design of these binding posts allows the use of a strong, hard material for the threads that provide the pressure on the connection, while at the same time using optimal electrical connections (which require a softer metal). By separating the mechanical and the electrical systems within the connector, both can be properly optimized.

Ring terminal connectors are included with every SA amplifier for proper hook-up of speaker cables to your amplifiers Cardas terminals.

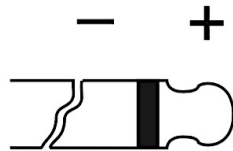


Connect the + (positive) output post of the amplifier to the + (positive) input terminal of the appropriate loudspeaker. Connect a – (negative or black) output post of the amplifier to the – (negative or black) input terminal of the appropriate loudspeaker. Take care to maintain this proper polarity throughout the system.

3. DC Trigger In and Out

These 12v trigger jacks provide compatibility with a wide range of products to facilitate remote turn-on and turn-off in systems. These 1/8" (3.5 mm) “mini-jacks” allow other components to bring the SA-3 in and out of standby. Two such mini-jacks are provided to allow “daisy-chaining” of this turn-on signal with other components, including additional amplifiers.

The remote trigger input will be operated by any positive-polarity DC signal between 3–20 volts (only a few milliamps are required), with tip polarity as shown below



Input Signal: 3-20 volts @ less than 10 mA
Output Signal: 12 volts @ 100mA

The DC Trigger Input has priority over the front panel switch. Therefore, if a trigger voltage is present at this input connector, the unit will be forced on and the front panel switch will be ignored. When the voltage transitions from high to low (off), the unit will go into standby.

When there is no voltage present at the trigger input (either because the controlling device is not sending, or because the plug is removed), the front panel switch will operate the SA-3, as you would expect.

The 12v Trigger Output jack is driven to a “high” state of 12 volts a few seconds after the SA-3 is turned on and can source as much as 100 mA of current at 12 volts. This signal may be used in turn to control other components, such as additional Wisdom Audio SA-series amplifiers. Each Wisdom Audio component has a short delay built into its DC trigger system to facilitate a staggered turn-on sequence.

Your Wisdom Audio dealer can help you take advantage of these design features to maximize your system’s convenience and versatility.



4. AC Mains Input & Switch

A 20-ampere IEC standard power cord is used with the SA-3. A high quality 20-ampere AC mains cord is included with the product, although the use of the standardized IEC receptacle means that you may easily substitute another high-quality AC mains cord if you wish

Note: Due to the high current nature of the SA-3, it uses a 20-ampere IEC receptacle and cord, rather than the more common 15-ampere version, and it will not accept a 15-ampere cord. If you decide to use an after-market power cord, it must employ the compatible 20- ampere IEC connector.

WARNING! Your new Wisdom Audio SA-3 has been safety-tested and is designed for operation with a three-conductor power cord. Do not defeat the “third pin” or earth ground of the AC power cord.

An **AC mains switch** is located above the power cord on the rear panel of the SA-3. This switch may be used to disconnect the unit from the AC mains without having to unplug the SA-3 from the wall outlet.

If you plan to be away for an extended period or have any other reason to turn the SA-3 completely off, you may either unplug the SA-3 or you may use the **AC mains switch**.

DANGER!

Potentially dangerous voltages and current capabilities exist within your SA-3. Do not attempt to open any portion of the SA-3’s cabinet. There are no user-serviceable parts inside your SA-3. All service of this product must be referred to a qualified Wisdom Audio dealer or distributor.

We recommend that care be taken to ensure that all AC plugs for the equipment in the system be wired to ensure proper AC polarity. Doing so will minimize noise in the system.

In the U.S., a simple AC mains tester (found at any hardware store) can test to ensure that your electrical outlets are wired properly. Elsewhere in the world (for example, in European Union countries), the AC mains plugs themselves are not always polarized. Your dealer can test for the proper orientation of the plug in the outlet. In such a case, it is good practice to mark both plug and outlet to ensure that



all products remain in the proper orientation should it become necessary to temporarily disconnect the system (as for example, during an electrical storm).

Care & Maintenance

To remove dust from the cabinet of your SA-3, use a feather duster or a lint-free soft cloth. To remove dirt and fingerprints, we recommend isopropyl alcohol and a soft cloth. Dampen the cloth with alcohol first and then lightly clean the surface of the SA-3 with the cloth. Do not use excessive amounts of alcohol that might drip off the cloth and into the SA-3.

CAUTION! At no time should liquid cleaners be applied directly to the SA-3, as direct application of liquids may result in damage to electronic components within the unit.

North American Warranty

Standard Warranty

When purchased from and installed by an authorized Wisdom Audio dealer, Wisdom Audio electronic products are warranted to be free from defects in material and workmanship under normal use for a period of five years from the original date of purchase.

IMPORTANT: Wisdom Audio electronics are designed for installation and operation in environmentally controlled conditions, such as are found in normal residential environments. When used in harsh conditions such as outdoors or in marine applications, the warranty is three years from the original date of purchase.

During the warranty period, any Wisdom Audio products exhibiting defects in materials and/or workmanship will be repaired or replaced, at our option, without charge for either parts or labor, at our factory. The warranty will not apply to any Wisdom Audio products that has been misused, abused, altered, or installed and calibrated by anyone other than an authorized Wisdom Audio dealer.

Any Wisdom Audio product not performing satisfactorily may be returned to the factory for evaluation. Return authorization must first be obtained by either calling or writing the factory prior to shipping the component. The factory will pay for



return shipping charges only if the component is found to be defective as mentioned above. There are other stipulations that may apply to shipping charges.

There is no other express warranty on Wisdom Audio products. Neither this warranty nor any other warranty, express or implied, including any implied warranties of merchantability or fitness, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and other states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. This warranty is applicable in the United States and Canada only. Outside of the U.S. and Canada, please contact your local, authorized Wisdom Audio distributor for warranty and service information.

Obtaining Service

We take great pride in our dealers. Experience, dedication, and integrity make these professionals ideally suited to assist with our customers' service needs.

If your Wisdom Audio amplifier must be serviced, please contact your dealer. Your dealer will then decide whether the problem can be remedied locally, or whether to contact Wisdom Audio for further service information or parts, or to obtain a Return Authorization. The Wisdom Audio Service Department works closely with your dealer to solve your service needs expediently.

IMPORTANT: Return authorization must be obtained from Wisdom Audio's Service Department BEFORE a unit is shipped for service.

It is extremely important that information about a problem be explicit and complete. A specific, comprehensive description of the problem helps your dealer and the Wisdom Audio Service Department locate and repair the difficulty as quickly as possible.

A copy of the original bill of sale will serve to verify warranty status. Please include it with the unit when it is brought in for warranty service.

WARNING: All returned units must be packaged in their original packaging, and the proper return authorization numbers must be marked on the outer carton for



identification. Shipping the unit in improper packaging may void the warranty, as Wisdom Audio cannot be responsible for the resulting shipping damage.

Your dealer can order a new set of shipping materials for you if you need to ship your loudspeaker and no longer have the original materials. There will be a charge for this service. We strongly recommend saving all packing materials in case you need to ship your unit someday.

If the packaging to protect the unit is, in our opinion or that of our dealer, inadequate to protect the unit, we reserve the right to repackage it for return shipment at the owner's expense. Neither Wisdom Audio nor your dealer can be responsible for shipping damage due to improper (that is, non-original) packaging.

Specifications

All specifications are subject to change at any time to improve the product.

- **Rated power output per channel:** 500 w/ch continuous rms power @ 4Ω above power ratings from 20 Hz–20 kHz at <0.5% THD
- **Peak output current:** 30 amps
- **Voltage gain:** >31 dB
- **Input sensitivity:** 1.2V for full output
- **Input impedance:** 25kΩ (balanced)
- **Polarity:** Non-inverting, Pin 2 positive
- **Signal to Noise ratio (main outputs):** –103 dB (ref 1V rms, A-wtd.)
- **Output impedance:** Less than 0.05Ω from 20–20,000 Hz
- **Thermal load:** 7 BTU/minute or less
- **Mains voltage:** 100V, 120V, or 230/240V determined by the needs of country for which the unit was manufactured; cannot be reset by dealer or user
- **Power consumption:** 1879W (±5%) at full power, all channels driven
- **Power consumption:** 10W (±5%) at idle and 2W (±5%) in standby
- **Shipping weight:** 40 lbs. (19 kg)
- **Dimensions HxWxD:** 3.75" x 17" x 13.63" (8.57cm x 43.2cm x 34.7cm)



For more information, see your Wisdom Audio dealer or contact:

Wisdom Audio

1572 College Parkway, Suite 164

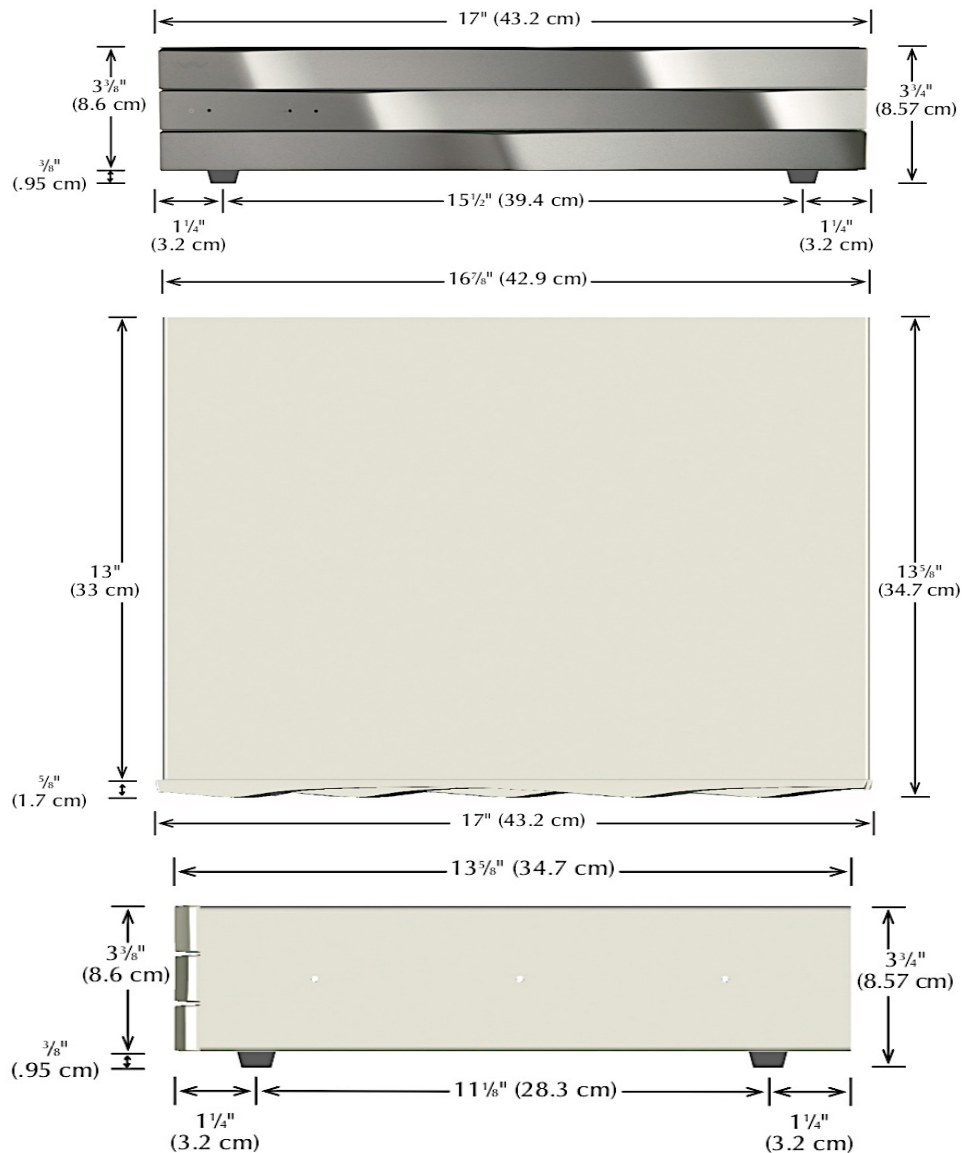
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SA-3 Dimensions





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