



Owner's Manual

**Subwoofer Amplifier
SW-1**

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 uninsulated "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 are 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 onto 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.

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Unpacking the SW-1

After unpacking your SW-1, keep all packing materials for future transport. In the event that you need to ship your SW-1, only the original, purpose-designed shipping carton is acceptable. Any other method of shipping this product runs a risk of damage to the SW-1—damage that would not be covered by the warranty.

Carefully inspect your SW-1 for possible damage due to shipping. If you discover any, contact your Wisdom Audio dealer immediately.

Warm up/break-in period

Although your Wisdom Audio SW-1 delivers outstanding performance straight out of the box, you should expect to hear it continue to improve as it reaches its normal operating temperatures and its various components “break in.” It has been our experience that the greatest changes occur within the first 25-50 hours, but that the SW-1 will continue to improve in sound quality for about 300 hours, after which time it remains quite constant.

The only exception to this rule is if power is removed from the unit, allowing it to cool down. In this case you should expect a brief warm-up period before the SW-1’s sound quality is at its best. (Fortunately, you will never have to repeat the full 300 hour break-in period.)

Placement Considerations

PRECAUTION

For your protection, review “Important Safety Instructions” and “Operating Voltage” before you install your SW-1.

Note that adequate clearance for the AC cord and connecting signal cables must be left behind your SW-1. We suggest leaving at least six inches (15 cm) of free space behind your SW-1 so all cables have sufficient room to bend without crimping or undue strain.

If possible, the SW-1 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 SW-1 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 of time. Just remember to turn it back on again when you return.

Ventilation

Your Wisdom Audio SW-1 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, 15 ampere plug is provided on the removable, IEC-standard AC mains cable.

The Wisdom Audio SW-1 will operate with 100V–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.

Special Design Features

High Efficiency

While many contemporary amplifiers waste 50% or more of the power they pull from the wall as heat, your SW-1 amplifier runs at approximately 90% efficiency. As a result, more power is available for the loudspeaker, and less is wasted as heat in your room.

The high efficiency of the design also means that the amplifiers can be placed in close proximity to each other, as in an equipment rack, without undue overheating. Of course, care must be taken to account for the heat generated by other components in the rack; but your Wisdom Audio amplifiers will not greatly contribute to the thermal management challenges of your system.

Powerful EQ

Wisdom Audio uses an unusual Regenerative Transmission Line™ (RTL™) design in our subwoofers. It provides exceptional transient response, for a subjectively “fast” and articulate bottom end which mates well to our unique thin-film technology.

However, as with most subwoofer designs, some equalization is required to fully realize the performance potential of RTL designs. In most subwoofers, the requisite EQ is simply built into the plate amplifier that is part of the subwoofer itself. This approach presents a problem, however, when the subwoofer is designed to be integrated into the home itself. Hence the SW-1, which allows the subwoofer’s amplifier to be placed in the rack with the rest of the electronics, while allowing the subwoofer to be placed wherever it will perform best, without violating building codes or even having to worry about having an AC outlet near the subwoofer location.

The SW-1 comes pre-programmed from the factory for a specific application, whether a particular subwoofer model, or “flat” in the case of EQ being provided for elsewhere in the system (perhaps in an SC-1).

Important!

Since the SW-1 comes pre-programmed for a specific model of subwoofer, it is essential to use it *only* with that model of subwoofer. Doing otherwise will almost certainly result in poor performance.



Front Panel

LED Indicators

The Standby LED ① glows amber when the unit is receiving power but has been placed into Standby by the presence of a 12V “low” trigger signal at the SW-1’s 12V trigger input.

If the SW-1 is in its normal Operating state, the Standby LED will be off but the blue Channel indicator ② will be on.

If both the amber and blue LEDs are off, **no power** is being supplied to the amplifier.

Note that the normal operating state for the SW-1 is to be fully operational when supplied with AC power. If you wish to toggle the SW-1 between Operate and Standby, you may do so by means of a simple DC trigger. (See **DC Trigger In and Out**, in the following section.)



Rear Panel



Caution!

Turn off the SW-1 before attempting to make or change any connections.

1 Speaker Output Terminals

The Wisdom Audio SW-1 is 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 SW-1 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.

There are two recommended methods for connecting speaker cables to your amplifier. Either a high-quality spade lug or hook lug, soldered to the cable (or crimped with extremely high pressure), is best.



Spade lug



Hook lug

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.



Caution!

DO NOT OVERTIGHTEN the binding posts on your amplifier! The unique design of these posts gives far more leverage than traditional posts. You will achieve tight, high contact pressure connections with only modest finger-tightening, and without having to resort to special tools.

2 RCA Inputs

These audio inputs normally accept the subwoofer output signals from the system's Surround processor. If two inputs are connected, they will be summed and amplified as a single channel.

Connect the appropriate outputs of the SW-1 to this input, using a high quality audio cable.

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 SW-1 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:

Remote turn-on
tip polarity



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

Output Signal: 12 volts @ 100 mA

When connected to AC mains power, with no trigger plug inserted, the SW-1 is normally fully On. Employing a DC Trigger Input allows you to place the amplifier into standby. When the voltage transitions from high to low (off), the unit will go into standby.

The 12V Trigger Output jack is driven to a "high" state of 12 volts a few seconds after the SW-1 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 Ethernet port

Not implemented at this time. Reserved for possible future use.

5 Power Switch

An **AC mains switch** is located adjacent to the power cord on the rear panel of the SW-1. This switch may be used to disconnect the unit from the AC mains without having to actually unplug the SW-1 from the wall outlet.

If you plan to be away for an extended period, or have any other reason to turn the SW-1 completely off, you may either unplug the SW-1 or you may use the **AC mains switch**.



Important!

As with all your electronics, we suggest you completely disconnect the SW-1 from the AC mains during severe electrical storms.

6 AC Mains Input and Fuse Holder

A 15-ampere IEC standard power cord is used with the SW-1. A high quality 15-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.



Warning!

Your new Wisdom Audio SW-1 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.

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



Danger!

Potentially dangerous voltages and current capabilities exist within your SW-1. Do not attempt to open any portion of the SW-1's cabinet. There are no user-serviceable parts inside your SW-1. All service of this product must be referred to a qualified Wisdom Audio dealer or distributor.

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).

Finally, the Wisdom Audio SW-1 incorporates a fuse block that protects both the live and neutral (ground) sides of the circuit. If your SW-1 is plugged into an AC outlet that you know is live (plug a lamp into it as a test), and yet appears to be off, check the following:

1. Check the AC cord to make sure it is not damaged.
2. Check the AC mains switch to ensure that it is On (the side with the straight line is depressed, not the "O" side).
3. If that does not resolve the problem, turn Off the AC mains switch ("O") and then disconnect the power cord from the AC mains receptacle.
4. Using a small screwdriver, gently pry open the fuse block cover at the top edge of the assembly. (You may be able to do it with just your fingernail.)
5. Pull out the fuse block, and check both fuses. If either is blown, please contact your local Wisdom Audio dealer (or Wisdom Audio) for service.

Care & Maintenance

To remove dust from the cabinet of your SW-1, 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 SW-1 with the cloth. Do not use excessive amounts of alcohol that might drip off the cloth and into the SW-1.



Caution!

At no time should liquid cleaners be applied directly to the SW-1, as direct application of liquids may result in damage to electronic components within the unit.

North American Warranty

Five Year 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.

During the warranty period, any Wisdom Audio component 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 component that has been misused, abused, altered, or installed and calibrated by anyone other than an authorized Wisdom Audio dealer.

Any Wisdom Audio component 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 in the event that 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 this component. 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 North America only. Outside of North America, 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 component 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 problem 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. This step is not necessary if the warranty is registered at the time of purchase. (Another reason to register your purchase at <http://www.wisdomaudio.com/registration/>.)



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 component 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 some day.

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

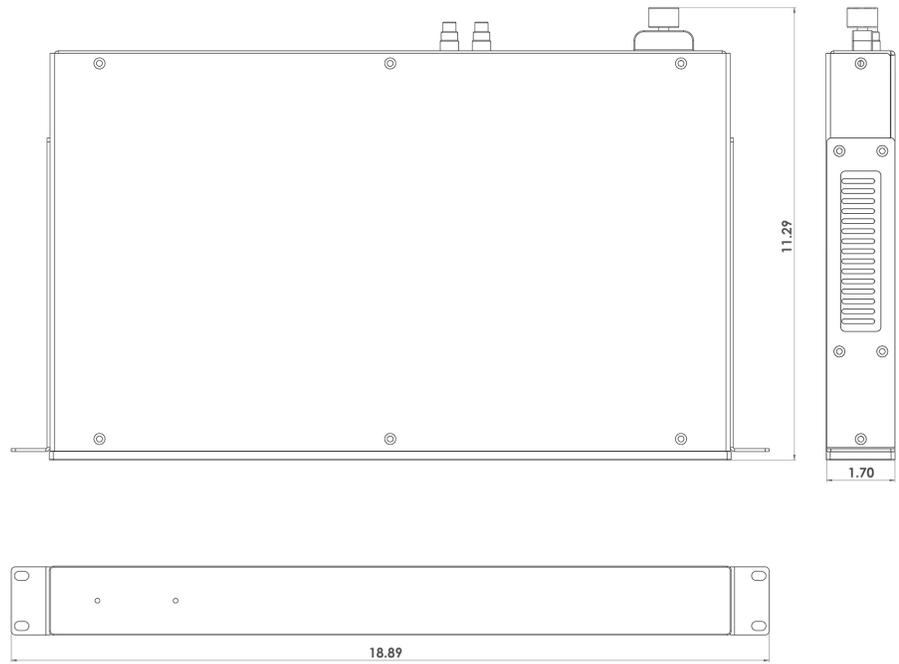
All specifications are subject to change at any time, in order to improve the product.

■ Rated power output @ 8Ω:	230 watts
■ Rated power output @ 4Ω:	370 watts
■ Peak output current:	30 amps
■ Voltage gain:	31 dB
■ Input sensitivity:	1.2V for full output
■ Input impedance:	47 kΩ
■ Polarity:	Non-inverting
■ Signal to Noise ratio (main outputs):	-100 dB (ref 1V rms, A-wtd.)
■ Output impedance:	less than 0.05Ω from 20–20,000 Hz
■ Recommended load impedance:	4–8Ω
■ Thermal load:	3 BTU/minute or less
■ Mains voltage:	100V–240V
■ Overall dimensions:	See “Dimensions”
■ Shipping weight:	12 lbs. (5.5 kg)
■ Power consumption:	500W (±5%) at full power 10W (±5%) at idle 0.5W (±5%) in standby

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

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Dimensions





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