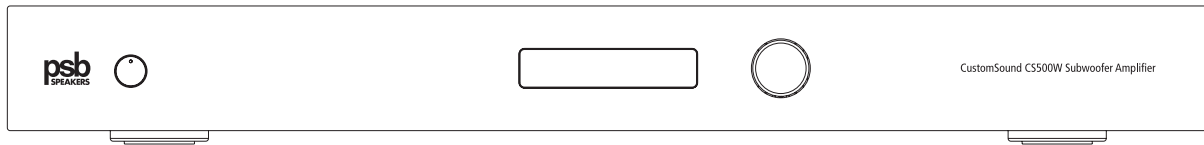


CS500W

SUBWOOFER AMPLIFIER

INSTALLATION MANUAL



SAFETY INFORMATION

Please read this booklet to ensure that you are getting the most out of your PSB product and music.



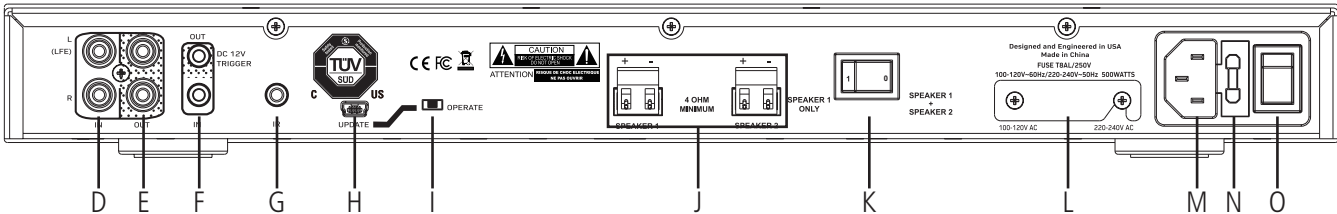
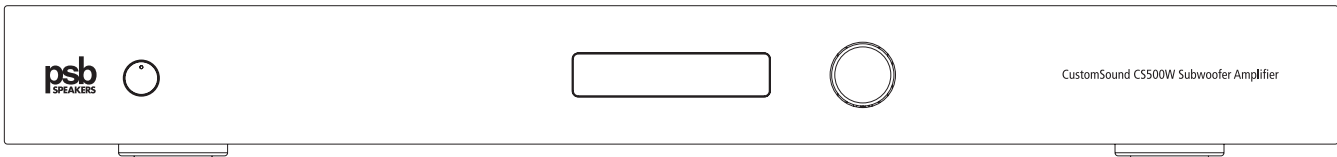
The lightning flash with arrowhead symbol, within the equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



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 the subwoofer amplifier.

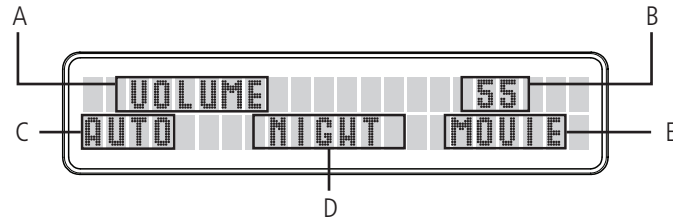
- A. Read these instructions.
- B. Retain these instructions for your records.
- C. Obey all warnings.
- D. Follow all instructions.
- E. Do not use this subwoofer amplifier near water.
- F. Clean with dry cloth.
- G. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- H. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
- I. Do not compromise the safety 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 bladed or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- J. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where the power cord exits from the subwoofer amplifier.
- K. Only use attachments/accessories specified by the manufacturer.
- L. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- M. Unplug the subwoofer amplifier during lightning storms or when unused for long periods of time.
- N. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen onto the subwoofer amplifier, the subwoofer amplifier has been exposed to rain or moisture, does not operate normally, or has been dropped.
- O. The subwoofer amplifier shall be used at maximum 45 degree C ambient temperature.
- P. To reduce the risk of electrical shock, do not open the subwoofer amplifier. For safety reasons it is only allow to the opened by qualified service personnel.
- Q. **WARNING:** To reduce the risk of fire or electric shock, do not expose this subwoofer amplifier to rain or moisture. Additionally, the subwoofer amplifier shall not be exposed to dripping or splashing and no objects filled with liquids shall be placed on the subwoofer amplifier.
- R. The AC mains plug is used as the subwoofer amplifier and shall remain readily operable.
- S. The product shall be used on open bench.
- T. No naked flame sources, such as lighted candles, should be placed on the subwoofer amplifier.
- U. The subwoofer amplifier should be connected to a AC mains socket outlet with a protective ground connection.
- V. Ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.
- W. This subwoofer amplifier is suitable for use in tropical climates.

FEATURES



- | | |
|---|--|
| <p>A. POWER Red: Off/Standby Blue: On/Operating</p> <p>B. STATUS DISPLAY MENU Displays current function/setting.</p> <p>C. SELECTION KNOB/ROTARY ENCODER Navigates and controls menu display functions.</p> <p>D. RCA LINE LEVEL INPUTS LFE IN: Connects the left female RCA input to an LFE output connection on a receiver or pre-amp processor. L/R IN: Connects the left and right female RCA input to the left and right front output connections on a receiver or pre-amp processor.</p> <p>E. RCA LINE LEVEL OUTPUTS OUT: Connects additional amplifiers.</p> <p>F. 12V TRIGGER IN/OUT 12V TRIGGER IN: Turns on the amp when a 12V signal is received from another 12V trigger device. 12V TRIGGER OUT: Sends a 12V signal to another 12V trigger device.</p> <p>G. IR PORT Connects IR device.</p> | <p>H. MINI USB PORT Reserved for service use.</p> <p>I. OPERATION MODE SWITCH UPDATE: For service use only. OPERATE: Normal function.</p> <p>J. SPEAKER OUTPUTS Connects the speaker wires to the binding posts. NOTE: Total impedance (SUB 1 + SUB 2) should not be less than 4Ω.</p> <p>K. SERIES (OUTPUT 2) SWITCH Enables the output 2 connector and puts the outputs in series.</p> <p>L. VOLTAGE SELECTOR Selects the appropriate input voltage setting: 100-120V or 220-240V.</p> <p>M. AC POWER IN IEC power cord.</p> <p>N. FUSE Additional T8AL/250V fuse included for servicing.</p> <p>O. MASTER POWER SWITCH Switch between on/off.</p> |
|---|--|

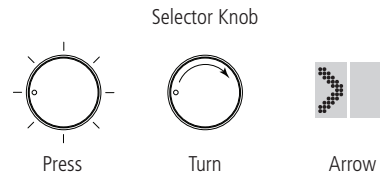
MENU DISPLAY



- A. VOLUME DISPLAY
- B. VOLUME LEVEL Displays the volume level.
NOTE: Lock mode overrides power mode.
- C. POWER MODE
Displays the power control mode for the amplifier. No display if FRONT PANEL power control mode is selected. NOTE: Only the volume level can be adjusted while on the main menu screen.
- D. NIGHT MODE
Displays if night mode is ON. No display if night mode is OFF.
- E. SOUND MODE
Displays the current sound mode setting. No display if sound mode is set to BYPASS.

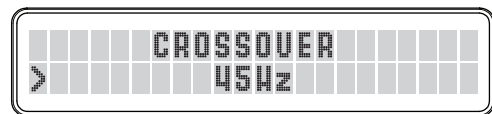
MENU FUNCTION SCREEN

1. Press the selection knob to enter the function sub menu.
2. Turn the selection knob to cycle through each sub menu option.
3. Press the selection knob to adjust the menu function.
4. An arrow (greater-than symbol) will appear when levels can be adjusted.
5. Press the selection knob again to exit the adjustment menu and turn the knob to advance to the next sub menu function.
6. Once reaching the last option in the function sub menu, press to exit to the main menu.



NOTE: The sub menu will scroll continuously in both directions. To exit, scroll either direction until reaching the "Menu Exit" screen and press the knob.

- A. **CROSSOVER:** 40Hz–250Hz/LFE
Selects the low pass filter for the amplifier
NOTE: Set LFE when using the LPF on an AVR. DEFAULT: LFE
- B. **SPEAKER EQ:** FLAT/CSIW SUB 10/CSIW SUB 28/CWS8/CWS10
Selects the EQ mode for the amplifier.
FLAT: 0 reference setting (unmodified sound).
CSIW SUB 10/CSIW SUB 28/CWS8/CWS10: Preset EQ optimized by subwoofer type.
DEFAULT: FLAT
- C. **PHASE:** 0–315° (45° steps)
Contours subwoofer performance to match speaker performance and acoustic environment.
DEFAULT: 0°



D. **SOUND MODE:** BYPASS/MUSIC/MOVIE

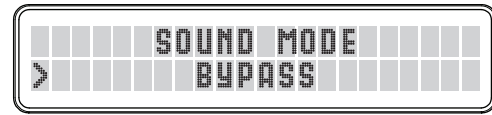
Selects media preference.

BYPASS: Reference

MUSIC: Boosts +1.5dB @ 50Hz

MOVIE: Boosts +3dB @ 30Hz

DEFAULT: BYPASS

E. **NIGHT MODE:** ON/OFF

ON: Limits high and low sound threshold for night time viewing. Reduces maximum power to 250W and relative sub level by 3dB.

OFF: No limiting

DEFAULT: OFF

F. **POWER CONTROL:** FRONT PANEL/12V TRIGGER/AUDIO SENSE

Sets the power on state.

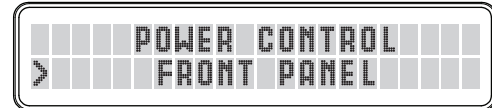
FRONT PANEL: Always on. Amplifier does not turn off automatically.

Turn until ON/OFF using the front panel power button.

12V TRIGGER: Amplifier turns on when 12V signal is detected and off when 12V signal is absent.

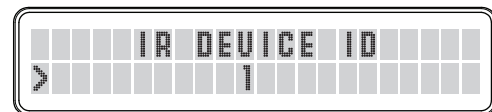
AUDIO SENSE: Audio Sense enabled. Amplifier turns on when audio signal is detected. Unit enters standby mode if no signal is detected after 15 minutes.

DEFAULT: FRONT PANEL

G. **IR DEVICE ID:** 1/2/3/4

Assigns an IR ID for each amplifier appearing in a system set up. Refer to the support tab of the product page to download the Control Protocol.

DEFAULT: 1

H. **LOCK CONTROLS:** ON/OFF

Locks the controls to prevent accidental changes in settings. Press and hold knob for 10 seconds to unlock.

ON: Locks controls

OFF: Allows adjustment of settings

DEFAULT: OFF

I. **FACTORY RESET**

Resets all functions to default settings. Push the knob to enter the reset menu, turn the knob once to select firmware reset, then push once more to reset to factory settings.

NOTE: Firmware version is displayed on screen when selected.

J. **MENU EXIT SCREEN**

Press the selection knob to exit to the main menu screen, or turn the selector knob to scroll to the beginning of the sub menu. The selector knob will advance the sub menu continuously in both directions. To exit the sub menu, scroll either direction until reaching the "Menu Exit" screen and press the knob.



NOTE: The volume level can be adjusted immediately once exiting the sub menu to the main menu.

SETUP

Amplifier Positioning

Placing the subwoofer amplifier can have a large impact on performance and longevity. Please take the following guidelines into consideration:

- Ensure that the unit is in a well-ventilated area that provides adequate cooling.

Installation

- Attach rack-mount brackets to the amplifier if mounting into rack or attach bottom feet on the amplifier chassis if placing on a shelf.

CONNECT

CAUTION: All connections and switching must be done with the subwoofer amplifier turned off. Connect the power cord last to ensure that the subwoofer amplifier is off during all the connections and set up.

RCA Line Level

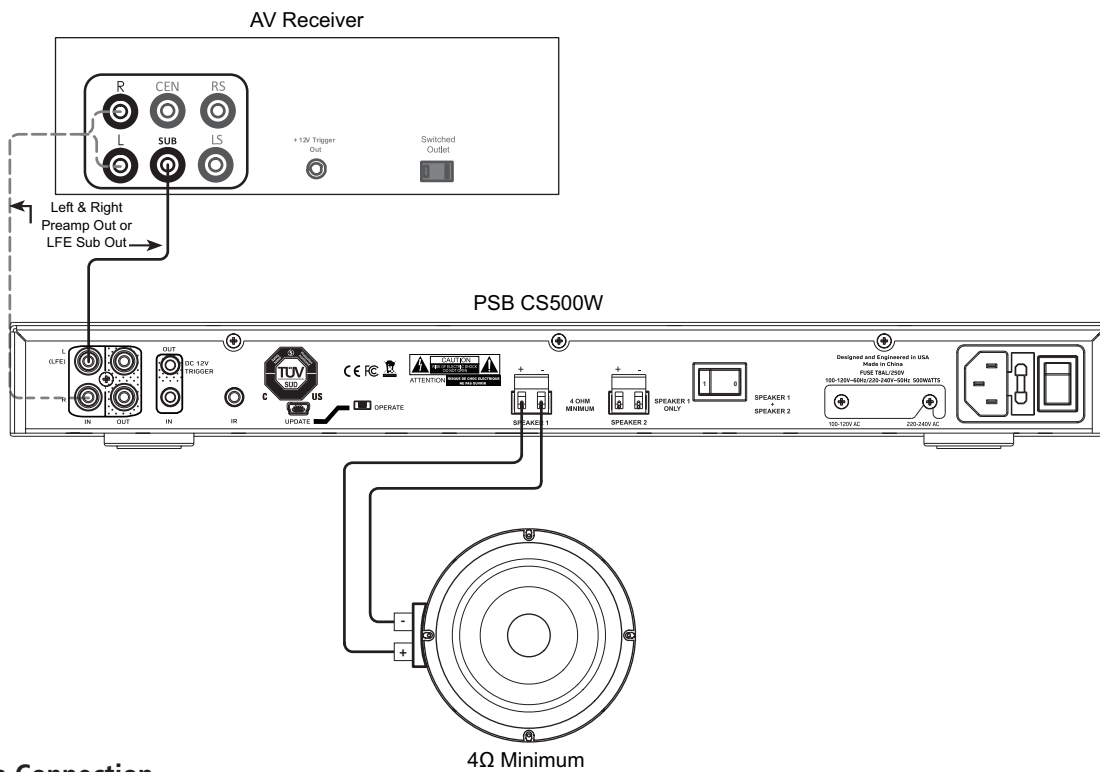
Use high-quality RCA cables that feature low impedance with adequate shielding and high-quality connectors.

Speaker Outputs

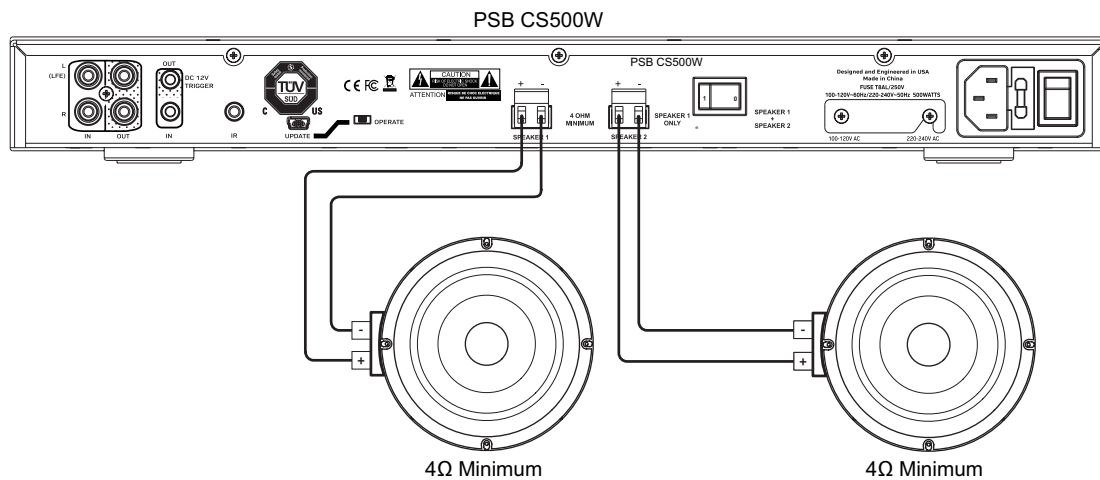
Use 12 or 16 gauge stranded two-conductor speaker wire. Connect the appropriate conductor to each screw terminal, observing correct polarity.

CAUTION: When two subwoofers are connected in parallel, the nominal impedance of each subwoofer should not be less than 8Ω.

Single Sub Connection

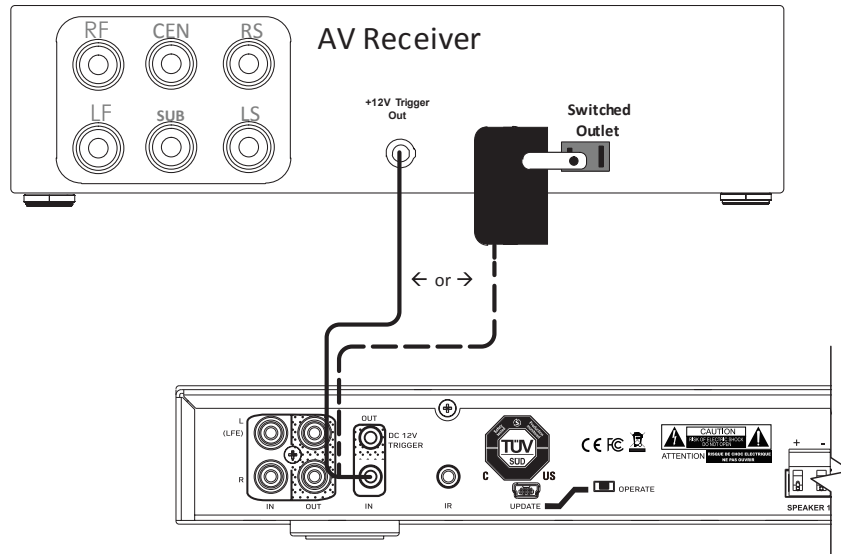


Dual Sub Connection

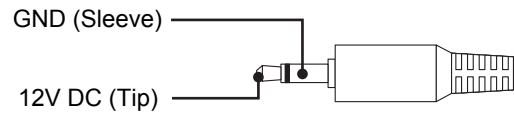


12V DC Trigger

Connect the 12V trigger output of another device to the 12V trigger input of the amplifier using a high quality mono cable.

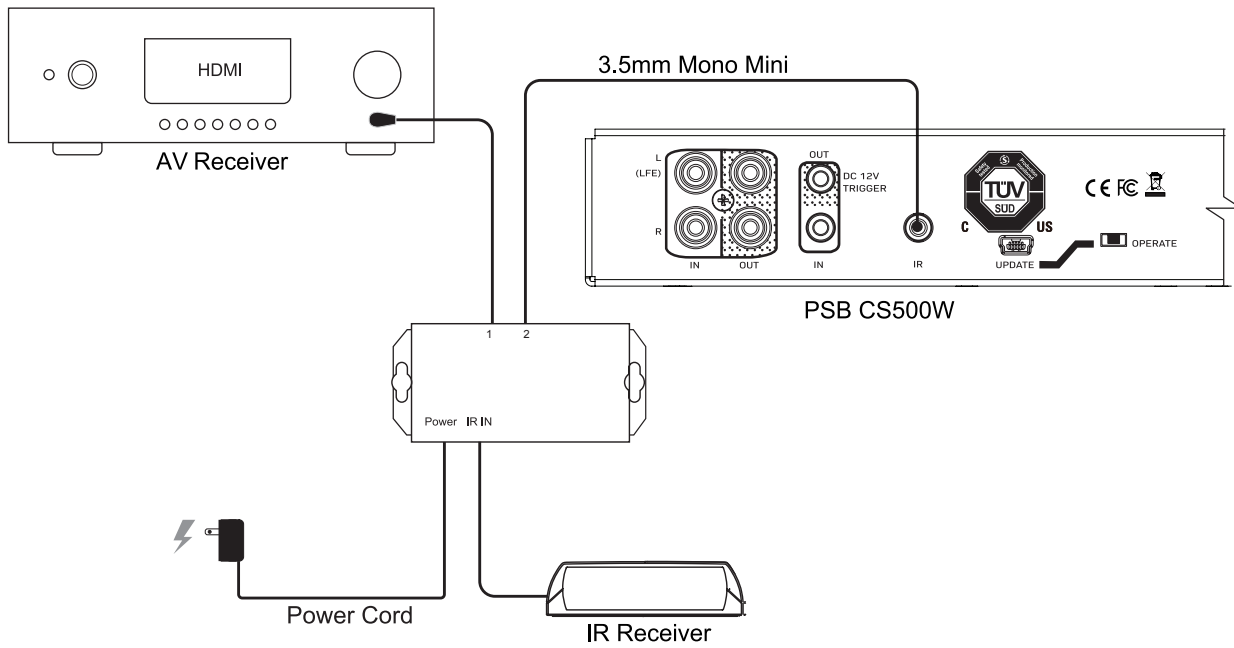


If the receiver does not have a 12V trigger output, using a 12V power supply plugged into a switched outlet on the receiver provides the same functionality. Connect the appropriate conductor to each screw terminal, observing correct polarity.

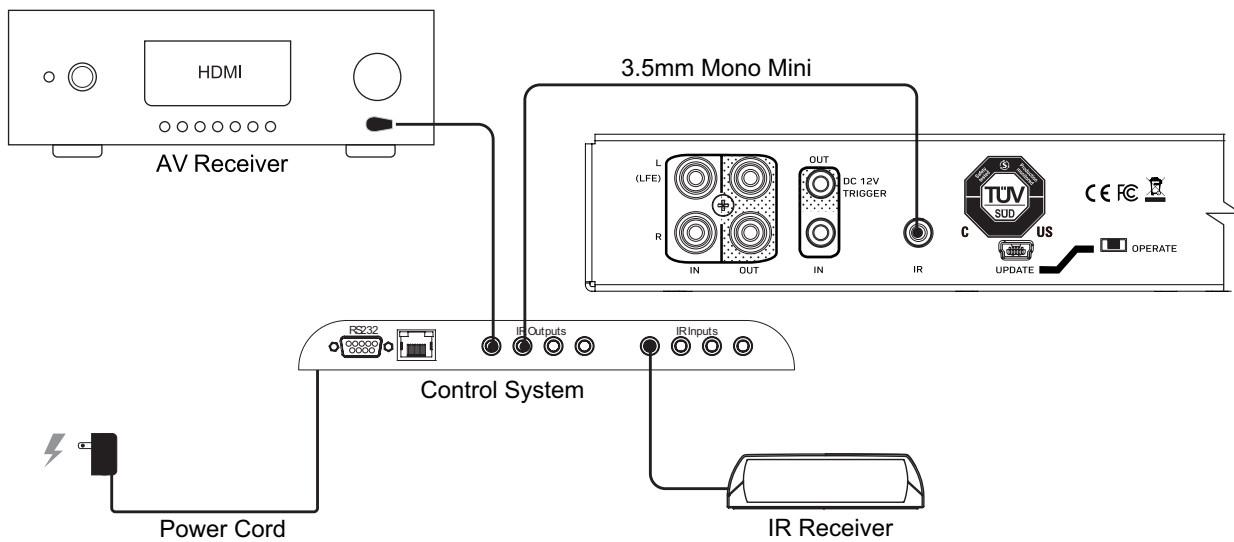


IR Port

IR Repeater Connections



Control Systems Connections



SPECIFICATIONS

| | |
|--------------------------|---|
| Continuous Power Output | 250 watts RMS at 8 ohms 500 watts RMS at 4 ohms (< 0.5% THD) |
| Input Sensitivity | 100 mV for 500W output 4 ohms |
| Input Impedance | 15,000 ohms |
| S/N Ratio | 88 dB (5 kHz bandwidth relative to 500W @ 4 ohms) |
| Frequency Response | -1.1dB at 300 Hz (Flat EQ, LFE Crossover Setting) -1.5dB at 20 Hz |
| Distortion | < 0.2% |
| Auto On Sensitivity | < 5.5 mV (Left) < 22 mV (Right) |
| External Trigger Voltage | 12V +/-1.2V no load 10.5 V with 100 mA load |
| 12V Trigger Threshold | 2.6 V |
| Current Limit Threshold | 2.7 ohms (4 ohm minimum nominal speaker load) |
| Front End Overload | 3.6 V RMS (L + R, 20 Volume, 40 Hz Signal, Flat EQ, LFE Crossover) |
| Dimensions | 16.9" W (19" including rack mounts) 1.75" H (2.1" including feet) 8.1" D (front switch to rear chassis) 8.9" D (front switch rear speaker connector) |
| Weight | 8.5 lb |
| Certification | TUV Listed and tested under UL/EN60065 for US and Canada |
| Fuse | T8AL/250V |

TROUBLESHOOTING

If you require service, please visit your local authorized PSB service centre, or www.psbSpeakers.com. If you have moved since your purchase, the nearest PSB dealer will be able to assist you. If the problem is not resolved, please contact us directly and provide the model name, serial number, date of purchase, dealer name, and a fully detailed description of the issue.

| | |
|-------------------------------|---|
| No Audio Output | <ul style="list-style-type: none"> • Audio cable to the source component is not connected properly, connection to output or the cable is defective. Check connections or replace cable with one that has been verified as good. • Amplifier is in standby mode and needs to be turned on (blue LED). • Check the connections of the speaker wire at both the speaker and amplifier. • The level adjustment is turned down. Slowly turn the dial to the right to raise the volume. |
| Hum or buzzing sound is heard | <ul style="list-style-type: none"> • Check RCA input cables by removing them one at a time and verify connections. |
| Amplifier will not turn on | <ul style="list-style-type: none"> • Ensure the amplifier is plugged into a live outlet. • Ensure the power switch on the front panel is on (blue LED). • Fuse is blown. Replace with 8AL fuse type. • The power mode may be set to the wrong mode for the system's configuration or setup. |
| Unable to control menu | <ul style="list-style-type: none"> • Ensure amplifier is not in Lock Mode. Hold for 10 seconds to unlock menu. |

