



PAX 50

COMPACT 70V  
COMMERCIAL AMP

## USER GUIDE



### Important Safety Instructions



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of dangerous voltage inside the product that may 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 instructions in the literature accompanying the product.

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

- 1. Read Instructions** — Read all the safety and operating instructions before operating this product.
- 2. Retain Instructions** — Retain safety and operating instructions for future reference.
- 3. Heed Warnings** — Adhere to all warnings on the product and in the operating instructions.
- 4. Follow Instructions** — Follow all operating and use instructions.
- 5. Cleaning** — Unplug this product from the wall outlet before cleaning. Use a damp cloth for cleaning. Clean the outside of the product only.
- 6. Attachments** — Do not use attachments that are not recommended by the product manufacturer; they may be hazardous.
- 7. Water and Moisture** — Do not use this product near water.
- 8. Accessories** — Do not place this product on an unstable cart or stand. The product may fall, causing bodily injury and damage to the product. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart to overturn.
- 9. Ventilation** — Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided.
- 10. Power Sources** — Operate this product only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your dealer or local power company. This product is equipped with a three-prong grounding plug. This plug will only fit into a grounding power outlet. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding plug.
- 11. Power Cord Protection** — Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.
- 12. Lightning** — Unplug the unit from the wall outlet for added protection during a lightning storm and when it is left unattended and unused for long periods of time. This will prevent damage to the product due to lightning and power line surges.
- 13. Overloading** — Do not overload wall outlets or extension cords. This can result in a fire or electric shock.
- 14. Inserting Objects into Unit** — Never push objects of any kind into this product through any openings; they may touch dangerous voltage points or short out parts that could result in fire or electric shock.

**15. Servicing** — Do not attempt to repair or service this product yourself. Opening or removing covers may expose you to dangerous voltage and other hazards. Refer all servicing to qualified service personnel.

**16. Damage Requiring Service** — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions: **a)** If the power-supply cord or plug is damaged.

**b)** If liquid has been spilled into the product. **c)** If the product has been exposed to rain or water. **d)** If the product does not operate normally by following the operating instructions. **e)** If the product has been dropped or damaged in any way.

**f)** If the product exhibits a distinct change in performance.

**17. Replacement Parts** — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer. Unauthorized substitutions may result in fire, electric shock, and other hazards.

**18. Safety Check** — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

**19. Wall or Ceiling Mounting** — Mount the product to a wall or ceiling only as recommended.

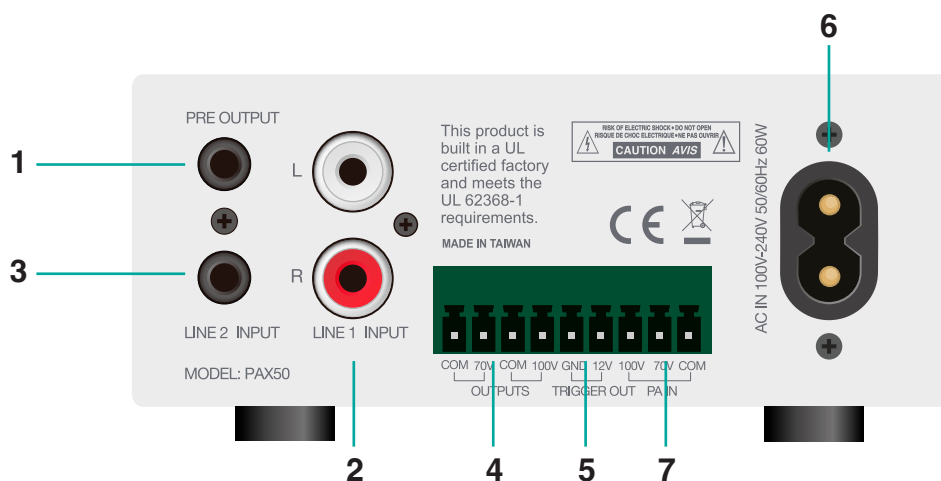
**20. Heat** — The product should be situated away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.

## INTRO / FEATURES

The OSD Audio PAX50 is a small format, 70/100-volt amp, that provides great flexibility for designing your commercial audio system. If your system needs more power or additional zones are needed, additional amps can be added to the rack, with both source sharing, or separate inputs for each amp. This makes expanding your system much easier. If you have multiple zones, you can share a source to each zone or have a different source in each zone. This highly featured but small footprint amp has 50 watts of power and is capable of powering eight speakers tapped at 5 watts. Two amps can be used together to create stereo zones where left and right signals are desired. The PAX50 is a Class D amp and is designed to run cool. This is ideal for rack mounting or other areas where ventilation is restricted. They also use a fraction of the electricity used in Class AB amps.

### Features:

- Modular, up to four amps can fit in 1 rack space, this means you can add more power to the system with no increase in the rack space required.
- Input can be shared with additional amps or different inputs can be used, add additional flexibility
- Class D amplification for efficient low-cost operation, and saves money
- Frequency response from less than 100Hz to 20KHz
- 2 x Line in and 1 x Mic in provides flexibility
- Signal sensing auto on and off with three-minute delay, allows for simple automation.



**1. Pre Output:** 3.5mm Stereo Audio Line Level Unbalanced Preamp Output for Pass-Through from Channel 2 Stereo Input.

**2. Line 1 Input:** 3.5mm Stereo Audio Line Level Unbalanced Input.

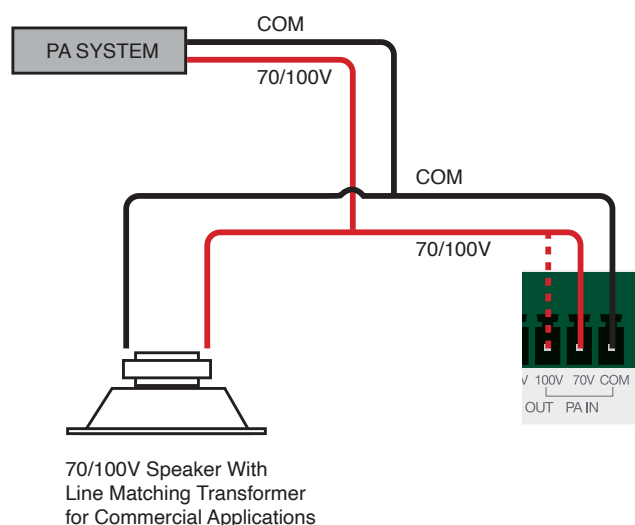
**3. Line 2 Input:** 2.5mm Left and Right Stereo Audio Line Level Unbalanced Inputs

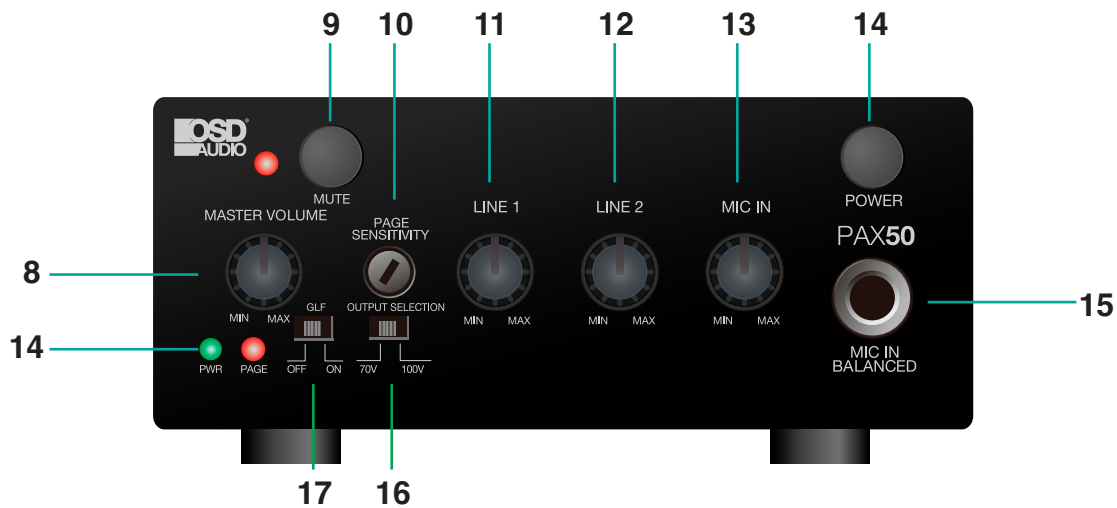
**4. Speaker Outputs:** The first four pins of the Phoenix Connector are Speaker Outputs. 70V Output; Pin #1 is Com (negative), Pin #2 is labeled 70V (positive). 100V Pin #3 Com (negative) and Pin #4 100V (positive). Both sets of pins feature a single channel Mono @50Watts

**5. Trigger Out:** Pin #5 GND (negative) and Pin #6 12V (positive) of the Phoenix Connector are the connections for the 12-volt trigger Output.

**6. AC Power:** 100V-240V 50/60Hz 60W Power Cord Input

**7. PA Input:** Pins #7 100V(positive), Pin #8 70V(positive), and Pin #9 COM(negative) connect to an external PA System.





**8. Master Volume:** **a.** Turn the knob to the left to decrease the volume of all inputs and sources. **b.** Turn the knob to the right to increase the volume of all inputs and sources.

**9. Mute:** When Mute switch is engaged the system is muted and the red LED lights up. When the Mute switch is disengaged, the system resumes normal output and the Indicator LED turns off.

**10. Page Sensitivity:** Three settings for Paging sensitivity

**Fully Counter-Clockwise:** PA IN , VR (Voltage Regulation) rotation at arrow position, Output is muted and Page LED lights up RED

**Middle setting 50%:** During the VR rotation at the center, when the PA IN input exceeds approximately 15V, the output is muted, and the PAGE Status LED illuminates RED. When input is at or below approximately 15V, the system resumes normal output, and the PAGE LED turns off.

**Maximum Setting-Fully Clockwise:** With VR at maximum when the PA IN Input exceeds approximately 10V, the output is muted and the PAGE Status LED lights up RED. When the input is equal to or below 10V, the system operated normally, and the PAGE indicator turns off.

**11. Line 1 Volume:** Adjust the Audio Level for the device connected to the Channel 1 Stereo Right and Left Female RCA's.

**12. Line 2 Volume:** Adjust the Audio Level for the Device Connected to Channel 2 3.5mm Stereo Input Jack.

**13. Mic Volume:** Adjust the microphone volume level. See Microphone Volume Control Setup on Page 6.

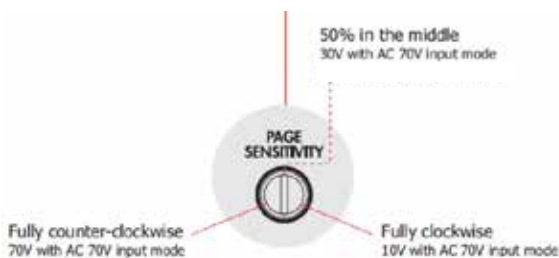
**14. Power:** This button is the Amp/Mixer to enter and exit standby mode.

**Power Status LED,** There is a power Status LED on the bottom left of the front panel. When power switch is enabled and a signal is present, LED will light up GREEN, It will turn RED if no signal present.

**15. Mic Input:** Quarter-Inch Balanced Tip Ring Microphone Input Jack.

**16. 70/100V Switch:** Ensure you select 70V or 100V to match the speaker output connections on the back panel.

**17. GLF ON/OFF:** Ground Loop Filter: When two or more devices are connected, noise may be generated. Turn the switch to the On position to eliminate the 50/60Hz noise channels combined.



The following information is provided for reference only. Please consult a professional if you are unsure about any aspect of commercial or residential installations.

## SPEAKER CONNECTION

The rear panel of the amplifier contains two Mono output connections, one for 70V and the other for 100V. **BE SURE TO SELECT** either 70V or 100V using the Output Selection switch on the front panel so the speakers connected match the Speaker Outputs on the back panel.

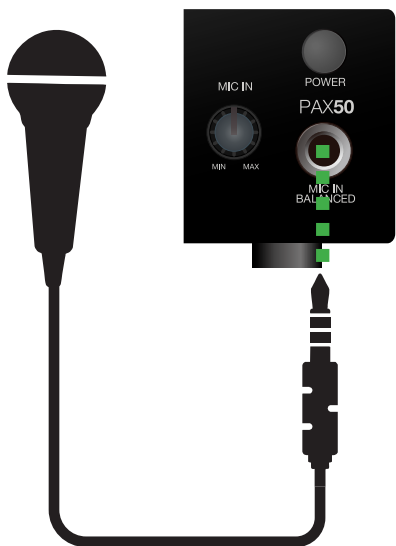
## CONNECT SPEAKERS PROPERLY

Speaker(s). One lead must always be connected to the COM (negative). **IMPORTANT NOTICE:** When using 70V or 100V constant line voltages, a proper, corresponding line-matching transformer (70V or 100V) must be used with each speaker. All transformers must be connected in parallel.

## ALWAYS CONNECT LINE TRANSFORMERS IN PARALLEL, NEVER CONNECT IN SERIES SPEAKER IMPEDANCES

Speaker terminal taps for 70V or 100V constant line voltage are provided on the rear panel of the unit. To connect the power output directly to a speaker or PA horn or a combination of speakers and/or PA horns, connect to the corresponding COM and (+) terminal (either 100V or 70V) on the Phoenix Connector. Ensure the speaker(s) or PA horn(s) can handle a reasonable power output from the amplifier, as permanent damage to the speaker(s) or PA horn(s) may result if they cannot. Also, be careful not to overload the amplifier with too many speakers or PA horns. The 70V or 100V constant line voltage must be used (parallel connection only). If 70V or 100V constant line voltages are used, a line-matching transformer must be used with each speaker. Again, do not overload or use incompatible speakers. Line transformers are the preferred method for multi-speaker installation. **CABLE REQUIREMENTS:** Output cabling typically does not require shielding in most cases and should be of sufficient gauge to minimize losses due to wire resistance over long runs (insertion loss). Cable thinner than 18-gauge AWG is not recommended. Long runs require 16-gauge AWG or heavier. In some cases where the output cable is run near unshielded intercom cables, electrical cables, radio transmission antennas, or other sources of interference, or when the amplifier is being used for paging from a telephone system, the amplifier may require shielded output cabling to prevent audio feedback or interference. **PRIORITY PAGE:** The amplifier features a voice-activated priority page circuit that automatically mutes all program material (Channel 1, Module, Microphone, etc.) from the amplifier's output, allowing MIC to override for paging announcements.

## MICROPHONE VOLUME CONTROL SETUP



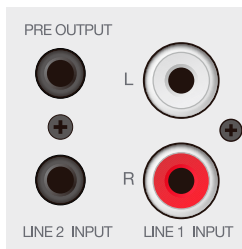
**Step 1:** Turn the Mic In volume knob down (counter-clockwise) to the “Min” position.

**Step 2:** Connect a Microphone to the AMP Input.

**Step 3:** Ensure that the Microphone is turned on and begin to adjust the “Mic In” volume knob. Turn clockwise until the desired sound level is reached.

**Step 4:** Test feedback by moving around the room and speaking into the Mic, if there is any feedback, turn the “Mic In” control knob down (counter-clockwise) until the feedback is gone.

## AUDIO CONNECTIONS, SIGNAL INPUT, AND SPEAKER (70V/100v) OUTPUTS



**Step 1:** Using either 3.5mm (Channel 2 Input/Output) or RCA Stereo Audio cables (Channel 1 Input), connect the audio source to the amplifier's audio input.

**Step 2:** Using the wires from the speakers, connect the 70V or 100V speaker(s) to the corresponding COM/70V or COM/100V of the Phoenix Connector. Ensure the matching speaker is selected by using the 70V or 100V switch on the front panel.

## SPEC

<b>Amplifier Type:</b>	Class D
<b>1 Single Channel mono 70V:</b>	+/-3V at 1KHz, 50W; THD>1%+/-0.5%
<b>1 Single Channel mono 100V:</b>	+/-3V at 1KHz, 50W; THD>1%+/-0.5%
<b>Rated Power % 70V:</b>	80% / 100V: 80%
<b>Rated Power Signal to Noise 70V:</b>	80dB / 100V: 80dB
<b>Line1:</b>	RCA Stereo Audio (left Mono) line level unbalanced
<b>Line2:</b>	3.5mm Stereo Audio line level unbalanced
<b>MIC:</b>	1/4" Tip Ring Stereo Balanced Mic Input
<b>Audio Pre- Output:</b>	3.5mm Stereo Audio line level unbalanced
<b>Frequency Response</b>	100Hz to 20KHz (+1dB-5dB)
<b>2 Input Gain Knobs:</b>	Line 1 (Analog RCA) and Line 2 (3.5mm Analog) Variable Gain Controls
<b>Mic Input:</b>	Single Mic Line 1/4" Input, Volume Knob, Mic needs External Preamp
<b>Master VC Front Panel:</b>	Master Volume Control Knob, 1/4" Balanced Line Input
<b>Output Selection Switch:</b>	70V/100V switch
<b>Impedance:</b>	18KΩ unbalanced
<b>THD+Noise:</b>	<+/-0.05%@1KHz at nominal level (1 watt)
<b>Speaker Output:</b>	Phoenix Standard Connector
<b>12V Trigger Output:</b>	GND/12V Phoenix Connector
<b>Delay:</b>	Remote Turn on 3 Seconds
<b>Auto Shutdown Time:</b>	3 Minutes
<b>External Power Supply:</b>	100VAC to 240VAC
<b>Enclosure Type:</b>	Metal Chassis
<b>Certifications:</b>	RoHS2, FCC, CE, Plenum
<b>Rack Mount Kit:</b>	Optional 1 and 2 AMP Rackmount Kit combo
<b>Dimensions WxDxH:</b>	158.5mm/6.24" x 256.5mm/10.09" x 48.5mm/1.9"
<b>Weight:</b>	1.35Kg./2.97 lbs.

OSD Audio electronics have (2) year Limited Warranty against defects in materials and workmanship. Proof of purchase must accompany all claims. During the warranty period OSD Audio will replace any defective part and correct any defect in workmanship without charge for either parts or labor.

OSD Audio may replace returned electronics with a product of equal value and performance. In such cases, some modifications to the mounting may be necessary and are not OSD Audio's responsibility.

For this warranty to apply, the unit must be installed and used according to its written instructions. If necessary, repairs must be performed by OSD Audio. The unit must be returned to OSD Audio at the owner's expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damaged resulting from abuse or from servicing performed by an agency or person not specifically authorized in writing by OSD Audio.

OSD Audio sells products only through authorized dealers and distributors to ensure that customers obtain proper support and service. Any OSD Audio product purchased from an unauthorized dealer or other source, including retailers, mail order dealers and online sellers will not be honored or serviced under existing

OSD Audio warranty policy. Any sale of product by an unauthorized source or other manner not authorized by OSD Audio shall void the warranty on the applicable product.

Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return for repairs, you must email customer service at [RMA@audiogeargroup.com](mailto:RMA@audiogeargroup.com) for a Returned Merchandise Authorization (RMA) number then the unit must be shipped to OSD Audio at the owner's expense, along with a note explaining the nature of service required. Be sure to pack the product(s) in a corrugated container with at least 3 inches of resilient material to protect the unit from damage in transit.

This Warranty Does Not Cover: Damage caused by abuse, accident, misuse, negligence, or improper operation (installation) • Any products that have been altered or modified • Any product whose identifying number of decal, serial #, etc. has been altered, defaced or removed • Normal wear and maintenance.

