AA240 Atlas Sound Mixer Amplifier

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

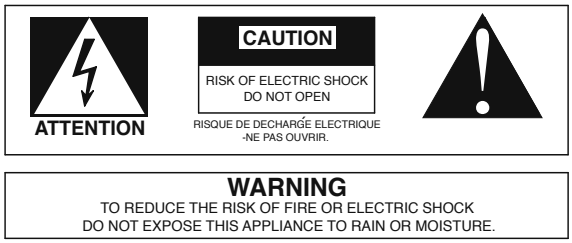
Specifications are subject to change without notice.

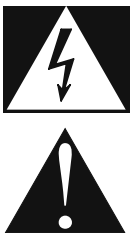
Table of Contents

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Important Safety Instructions





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.

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 product.

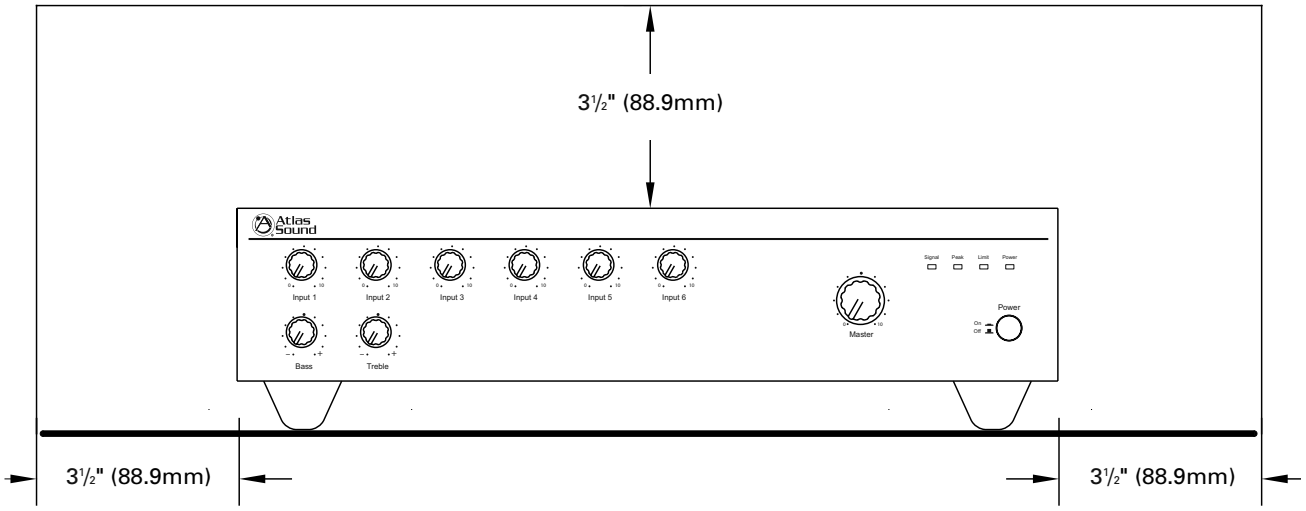
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (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 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.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.
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 device. When a cart is used use caution when moving the cart/device combination to avoid injury from tip-over.
13. Unplug this device during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the device 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 device, the device 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, this device should not be exposed to rain or moisture and objects filled with liquids, such as a vase, should not be placed on this device.
16. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.
17. The mains plug of the power supply cord shall remain readily operable.

Specifications are subject to change without notice.

CAUTION – When Installing the Product

- Plugging in or unplugging the power cord with wet hands may result in electric shock.
- Never move the device with the power cord plugged into the wall, as damage to the power cord may result.
- When unplugging the cord from the wall, grasp the plug, NOT the cord.
- Never install this device in humid or dusty locations, nor in direct sunlight, near sources of heat, or in areas where sooty smoke or steam are present. Fire and electric shock may result.
- Keep all sides of the device at least 3½" away from objects that may obstruct air flow to prevent the unit's internal temperature rise.

Amplifier Clearance Requirements



Specifications are subject to change without notice.

WARNING – When the Device is in Use

- To prevent electric shock, do not remove the device cover as there are high voltage components inside. Refer all servicing to Atlas Sound.
- Should any of the following irregularities occur during use, immediately switch off the power, disconnect the power cord from the AC outlet and contact Atlas Sound. Do not to attempt to continue operation with the device as this may cause fire or electric shock:
  - Smoke or strange smell coming from the unit.
  - If the device falls or the case is damaged.
  - If water or any metallic objects falls into the device.
  - If the power supply cord is damaged in any way.
  - If the device is malfunctioning.
- Do not insert or drop metallic objects or flammable materials into the ventilation holes of the device's cover, as this may result in electric shock or fire.
- Do not place any containers with liquid or metallic objects on the top of the device. If any liquid spills into the unit, fire or electric shock may result.
- Never operate this device or touch the power supply cord during an electrical storm, electric shock may result.
- Never exceed the wattage on the product when connecting equipment. Fire and/or property damage may result.
- Operate the device only with the voltage specified on the unit. Fire and/or electric shock may result if a higher voltage is used.
- Do not modify, kink, or cut the power cord. Do not place the power cord in close proximity to heaters and do not place heavy objects on the power cord, including the device itself, doing so may result in fire or electrical shock.
- Ensure that the safety ground terminal is connected to a proper ground. Never connect the ground to a gas pipe as a catastrophic disaster may result.
- Be sure the installation of the product is stable, avoid slanted surfaces as the product may fall and cause injury or property damage.

CAUTION – When the Device is in Use

- Never place heavy objects on the product, causing it to fall and/or break, resulting in personal injury and property damage. In addition, the product itself may fall and cause injury and property damage.
- Contact Atlas Sound for instructions on cleaning the inside of the unit. Large accumulations of dust inside the unit may result in heat buildup and fire.
- Ensure that the power supply plug is securely plugged into the wall outlet. Never allow dust to accumulate on the power plug or inside the wall outlet.
- When cleaning the unit or the unit is not to be operated for an extended time period, unplug power cord from the wall.

Introduction

Congratulations and thank you for purchasing the Atlas Sound Model AA240 professional grade mixer / amplifier. An integral part of the Strategy Series of commercial products, the AA240 was engineered and integrated with unique features to assist the contractor / installer in today's commercial business audio environment.

Features

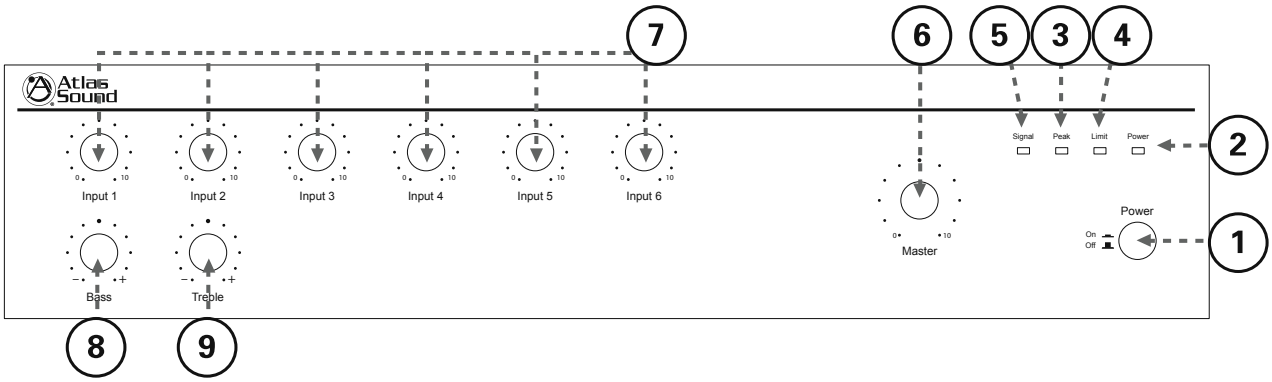
- Zone 1 Output 240 Watts
- Zone 2 Output 1 Watt @ 8Ω or 1.5V @ 600Ω
- Inputs 1–5 Mic/Line Switchable
- Input 6 Line Level Only
- Input 1 has VOX Send
- Inputs 2-6 have Switch Selectable Mute Receive
- 2 Tape and 2 Line Outputs
- Remote VCA Selectable INPUT 6 or MASTER
- Switch Selectable Bridge In/Out Bus Allows Amplifier Combining
- Pre-Amp Out-Power Amp in Loop

Applications

The AA240 will be right at home in large retail, commercial, and industrial paging and background music applications. Hotels and conference centers will appreciate the room combining and remote volume control features that this product provides.

Specifications are subject to change without notice.

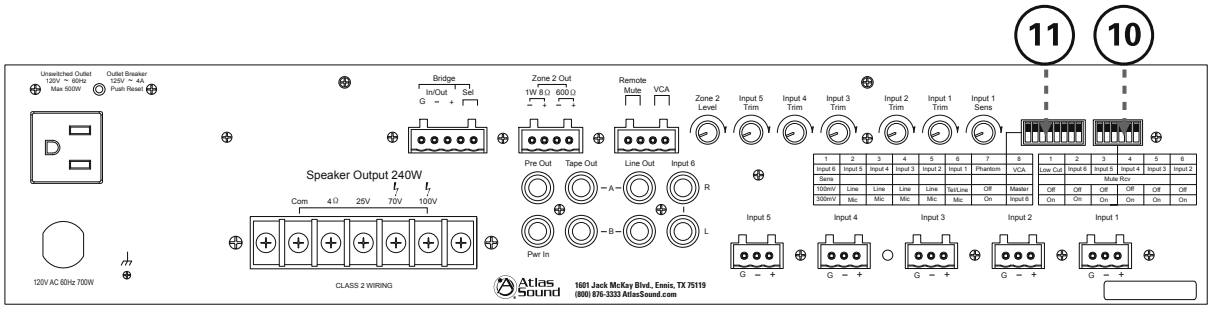
Front Panel Description



1. Power Switch
   This push on / push off switch applies power to the AA240.
2. Power LED
   This LED will illuminate blue when the AA240 is turned on.
3. Peak LED
   The PEAK LED will illuminate Red when the AA240 is in a clipping condition, caused by excessively high input levels or a GAIN control is turned up too high. An occasional flash is OK.
4. Limit LED
   This LED will illuminate Yellow when the amplifier is consuming excessive current. At that point, a limiting circuit is being activated, preventing the amplifier from failure. The most likely cause for the fault is an incorrect load impedance on the output of the amplifier. The LED should never come on if a proper load is applied.
   Note: An occasional LED flash is okay. When LED is ON audible distortion may be heard at the speakers.
5. Signal LED
   This LED will assist you in setting gain structure into the amp. With a source connected to the amp and playing, turn up the channel gain control until this LED just starts to flash green. Once all the sources connected are playing, the SIGNAL LED may be on solid. This condition is normal.
6. Master Gain Control
   The MASTER GAIN CONTROL will raise or lower all the input channels together. A good starting point for setting gain structure is to set MASTER GAIN CONTROL at the 12:00 position, and then adjust the individual channels one at a time.
7. Input 1-6 Controls
   The gain for input channels 1-6 are controlled by these rotary controls. The MASTER GAIN CONTROL must be turned up in addition to the input controls for audio to be present at the speaker terminals.
8. Bass Control
   The BASS CONTROL is a shelving type control which will boost or cut bass frequencies at 100Hz at the rate of ±6dB.
9. Treble Control
   The TREBLE CONTROL is a shelving type control which will boost or cut treble frequencies at 10kHz at the rate of ±6dB.

Specifications are subject to change without notice.

Rear Panel Description



10. Dipswitch "A" Positions 1–6

Understanding the functionality of the dipswitches is key to getting the most out of the AA240. Whether the switch is in the "Up" or "Down" position is critical to the function of the amplifier.

Note: Mispositioning any of these switches may cause harm to the speakers or amplifier. We recommended all levels be turned down prior to making any switch selections. Pay close attention to the two assignment charts and manual for proper settings.

Dipswitch 1 - LOW CUT

When in the "ON" position, frequencies below 400Hz are attenuated at the rate of 6dB per octave.

1	2	3	4	5	6
Low Cut	Input 6	Input 5	Input 4	Input 3	Input 2
	Mute Rcv				
Off	Off	Off	Off	Off	Off
On	On	On	On	On	On

Note: The rotary bass control is bypassed when the LOW CUT filter is on. We suggest that when paging horns are connected to the AA240, engage the LOW CUT filter to prevent the horns from operating below their cut off frequency.

When "OFF", the amplifier operates full bandwidth.

Dipswitch 2–6 - MUTE RCV (RECEIVE)

When "ON", Input's 2–6 signals will be muted upon a signal present on Input 1 (Refer to Number 11 Input 1 Sens), or a contact closure on the remote mute terminals (Refer to Number 16 Remote Mute).

11. Dipswitch "B" Positions 1–8

Dipswitch 1

When set to the "100mV" position, the sensitivity of Input 6 is suitable for inputting Telephone Paging Signals. When set to the "300mV" position, the sensitivity of Input 6 is suitable for CD/DVD player outputs.

1	2	3	4	5	6	7	8
Input 6	Input 5	Input 4	Input 3	Input 2	Input 1	Phantom	VCA
Sens							
100mV	Line	Line	Line	Line	Tel/Line	Off	Master
300mV	Mic	Mic	Mic	Mic	Mic	On	Input 6

Dipswitch 2–5

When set to the "Line" position, input sensitivity is suitable for CD/DVD line level inputs.
When set to the "Mic" position, sensitivity is suitable for microphone inputs.

Dipswitch 6

When set the "Tel/Line" position, Input 1 sensitivity is suitable for telephone paging and line level signals.
When set to the "Mic" position, the sensitivity is set for microphone signals.

Dipswitch 7

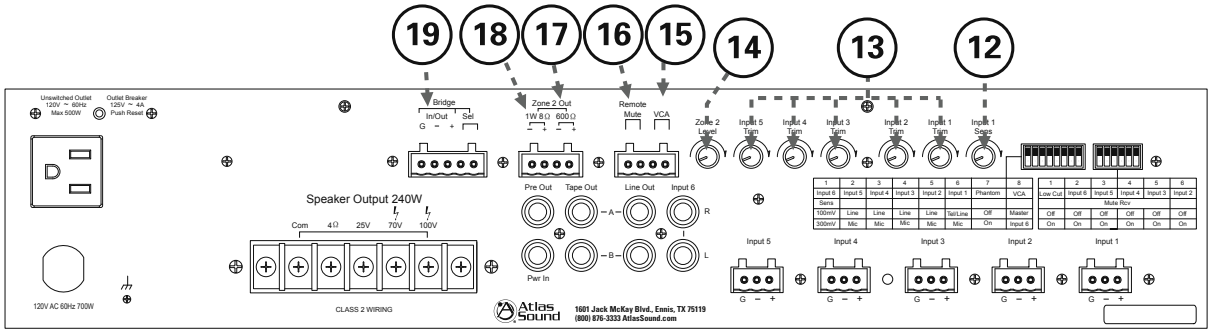
When set to the "OFF" position, PHANTOM POWER is turned off on INPUTS 1–5.
When set to the "ON" position, PHANTOM POWER (24VDC) is available on INPUTS 1–5.

Note: The Phantom Power when activated is present for both Line and Mic modes. In some Line source input application the Phantom Power may cause popping. This can be corrected by adding a 10uf – 100uf / 50V electrolytic capacitor in series with the input. Contact Atlas for an application note.

Dipswitch 8

When set to the "Master" position, the VCA control port acts as an overall system remote volume control, adjusting all the input channels present on the master section mix bus up or down simultaneously. When set to the "Input 6" position, the VCA remote control port affects only the level of INPUT 6.

Specifications are subject to change without notice.



12. Input 1 Sens

This control adjusts how sensitive the mute send circuitry on INPUT 1 reacts. Setting the control fully counter clockwise will lower the sensitivity and a higher amplitude signal will be required at INPUT 1 to trigger the mute send circuits. Fully clockwise will raise the sensitivity of the mute circuits, where a lower amplitude signal will trigger a mute send. Careful calibration of this control may be required to fully utilize the mute circuits' capabilities. Adjustment of this control should occur after the input trim (13) for channel 1 is set.

13. Inputs 1-5 Trim

These variable controls allows fine tuning of the gain of INPUTS 1 – 5. There is 20dB of variable gain available. The trim only applies when the input is set to the "Mic" position on the dipswitch.

14. Zone 2 Level

This rotary control will vary the signal level at the Zone 2 output terminals. Fully counter-clockwise (0) is off; fully clockwise (10) is the maximum output level. The Zone 2 output gets its signal from INPUT 6.

15. VCA

Remote location of the level control can be accomplished via the VCA control port. You can control the overall level (Master) or just Input 6. This selection is made via Dipswitch "B" position #8. Connect the two leads from the optional remote volume control (AAVC-10K) to these terminals. This remote level control is POST Master and Input 5 Level Controls. Set the system's maximum levels using the amplifier level controls and then use the remote VCA potentiometer as an attenuator from the maximum levels set. See the VCA setup section for instructions on wiring the potentiometer.

16. Remote Mute

The Remote Mute feature is useful when the background system needs to be muted from a remote location. When shorting the Remote Mute terminals together, (G) to (M), the assigned channels will be muted.

Note: Input 1 cannot be VOX or remote muted at anytime. Dipswitches 2-5 settings determine which inputs are to receive the Mute trigger. To trigger the mute it is common to use an external contact closure or switch on a microphone.

17. Zone 2 Output – 600Ω

The 600Ω 1.5V (Zone 2 Out) output is typically connected to a PBX MUSIC ON HOLD port, also known as MOH. The ZONE 2 output gets its signal from INPUT 6.

18. Zone 2 Output – 1 Watt 8Ω

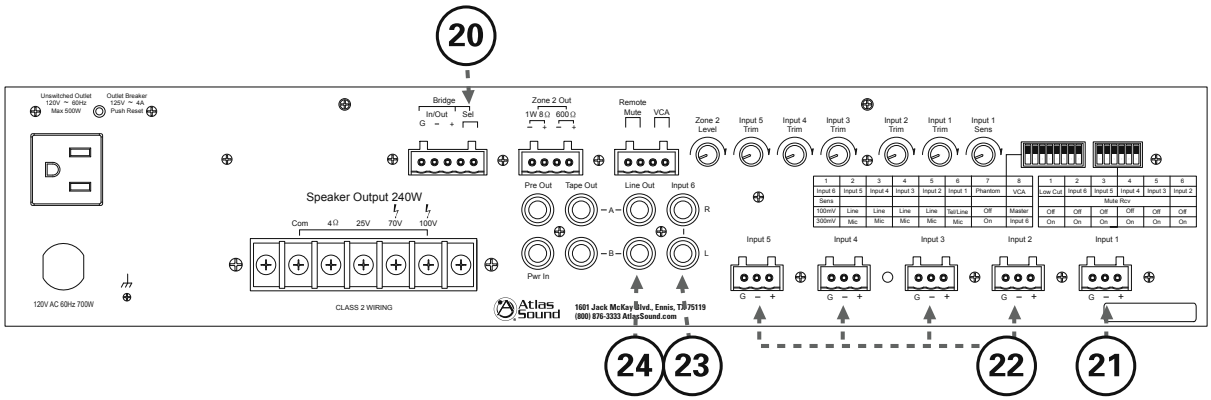
The 8Ω 1W Zone 2 output can drive an external 8Ω speaker, and is taken Pre input 6 gain control. Use the 1W 8Ω terminals for connection to an external speaker.

19. Bridge In/Out

Certain installations have the need to combine one or more mixers together. These mixers may be in different rooms of an install but have the need to share a page or music throughout the installation. These terminals provide a way to send and receive balanced line level signals from the internal mix bus of the AA240. The "BRIDGE IN/OUT" feature is PRE Tone Controls and Low Cut Filter the Bridge In/Out feature allows you to send and receive a balanced signal. This is important for allowing longer distances between the mixers.

Note: This function should ONLY be used with other Atlas Sound mixers that have this feature. The Send and Receive signals are combined through the same terminals. To activate this feature, see number 20 Bridge Select.

Specifications are subject to change without notice.



20. Bridge Select

The "Bridge Select (Sel)" terminals are the access point to activate the "Bridge In/Out" feature. To activate the feature connect the two points together via an external contact closure. These two points must be connected to send or receive any signal. By connecting the Bridge In/Out terminals of two AA240s, a simple room combining system can be accomplished. If using a remote switch and closing it, the "Bridge Select (Sel)" will combine the amps as one, opening the switch will separate the two amps.

Note: If combining 3 or 4 mixers together the output level will have to be adjusted before and after Bridge Sel terminals are connected (shorted) together. We suggest utilizing the Remote Level control when using this feature.

1	2	3	4	5	6	7	8
Input 6	Input 5	Input 4	Input 3	Input 2	Input 1	Phantom	VCA
Sens							
100mV	Line	Line	Line	Line	Tel/Line	Off	Master
300mV	Mic	Mic	Mic	Mic	Mic	On	Input 6

21. Input 1

Balanced mic or line level signals connect to the (+) (–) and (G) terminals. Refer to the chart above "Multi Function Dipswitch" for the following setting. Dipswitch 6, labeled "Input 1" must be set to the proper position for mic or Tel/Line level. If you are connecting an unbalanced line level input, tie (short) the (G) and (–) terminals together. An optional Input Isolation Transformer (AAIT-600) is available if a ground loop problem exists. See page 20 for transformer installation. Contact Atlas Sound for more details on the Input Isolation Transformer.

Note: Input 1 cannot be muted from other channels. This channel is the VOX mute send to the other inputs that are set to Mute Receive. The sensitivity and threshold for the VOX send works in conjunction with the Input 1 Trim and the Input 1 Sens.

22. Inputs 2-5

Inputs 2-5 are balanced, line or mic level (Refer to Dipswitch Bank "B" 2-6 for setting input sensitivity). For wiring unbalanced inputs, tie (short) the (G) and (–) terminals together.

Note: The Phantom Power when activated is present for both Line and Mic modes. In some Line source input application the the Phantom Power may cause popping. This can be corrected by adding a 10uf - 100uf/ 50V electrolytic capacitor in series with the input. Contact Atlas for an application note.

23. Input 6

INPUT 6 consists of a pair of stereo summing, line level inputs. Connect unbalanced audio outputs here such as CD players or audio from DVD players.

24. Line Out A/B

The LINE OUT connector is useful for providing unbalanced line level signal to another amplifier or other external devices. Prior to using this feature one must understand where the internal signal pick up point is so you can decide if it is correct for your application. We suggest you refer to the block diagram of the AA240 to have a complete understanding of the signal flow.

Note the following conditions for LINE OUT:

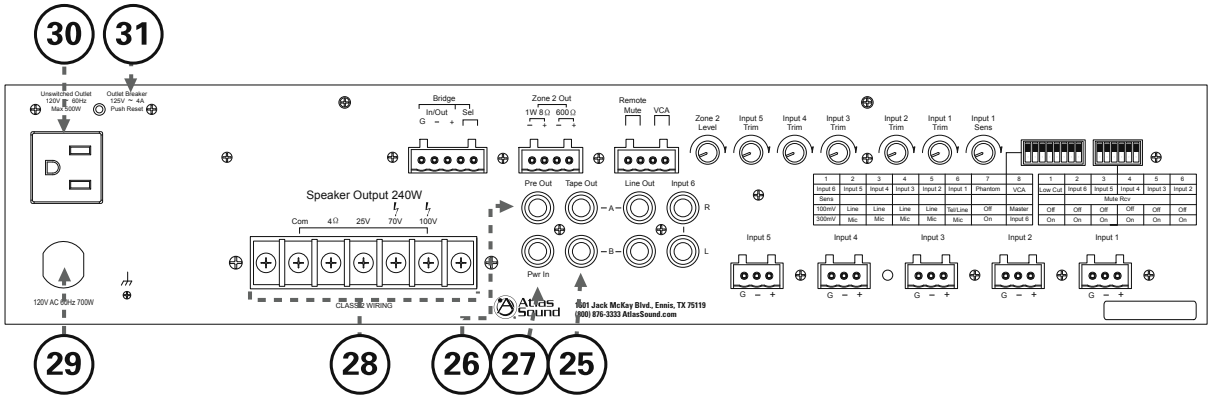
A. Post Low Cut Filter

B. Post Tone Controls (meaning the settings for the Bass and Treble controls affect this signals output).

Note: Refer to Low Cut Filter Switch for complete understanding of the LCF feature.

C. Post Amp In (meaning any signal that is inserted into the Pre AMP In jack will be present at the Line Out).

Specifications are subject to change without notice.



25. Tape Out A/B

Line level mono signals are available at this jack for connection to recording devices. The signal available here is PRE tone control and low cut filter and comes from the internal mix bus.

26. Pre Out

The PRE OUT connector has POST tone control signals available to drive another power amp or external audio devices. Use in conjunction with the AMP IN connector, an effects loop can be created by connecting the PRE OUT jack to a device such as an equalizer then back out to the AMP IN connector. See the connection diagram in the setup section of this manual.

27. Pwr In

The AMP IN connector is useful for converting the AA240 into a slave amp. When a line level signal is connected to this input, the internal connection between the preamp and internal power amp is broken. The AA240 is now just a power amplifier, amplifying audio signals applied to this connector.

28. Speaker Terminals

For loudspeaker connections, connect using the following information or proceed to the setup section for typical wiring diagrams.

COM - Speaker common or negative connection

4Ω - Connect to direct coupled loudspeakers

25V - Connect to transformer coupled, 25V loudspeakers with a total load impedance of no less than 2.6Ω.

70.7V - Connect to transformer coupled, 70.7V loudspeakers with a total load impedance of no less than 21Ω.

100V - Connect to transformer coupled, 100V loudspeakers with a total load impedance of no less than 41.6Ω.

29. Power Cord

Connect the power cord to 120VAC only. Serious damage may result if accidentally connected to other line voltages.

30. Unswitched Outlet

The 120VAC outlet is energized at all times when the AA240 power cord is connected to a live duplex outlet. Useful for connecting Atlas work lights, etc. Keep the total power draw below 750W.

31. Circuit Breaker – Unswitched Outlet

The circuit breaker is designed to trip and shut down the AA240 "Unswitched Outlet" upon an over current condition. After correcting the cause of the breaker tripping, reset the breaker by pushing in on the tab.

Specifications are subject to change without notice.

Quick Start Examples

Example 1 — System Paging, BGM, and MOH with Remote Master Level Control

This application has the paging microphone into INPUT 1, BGM (CD player) into Input 2, and a Message Repeater or MOH into Input 6. The Zone 2 Output is sent to the telephone system's MOH input port. A level control is placed in another area such as a front desk to adjust the system's level without having to go the equipment room. When a page comes through Input 1, the BGM is muted allowing only paging to be heard through the main system. The MOH is not affected during the page.

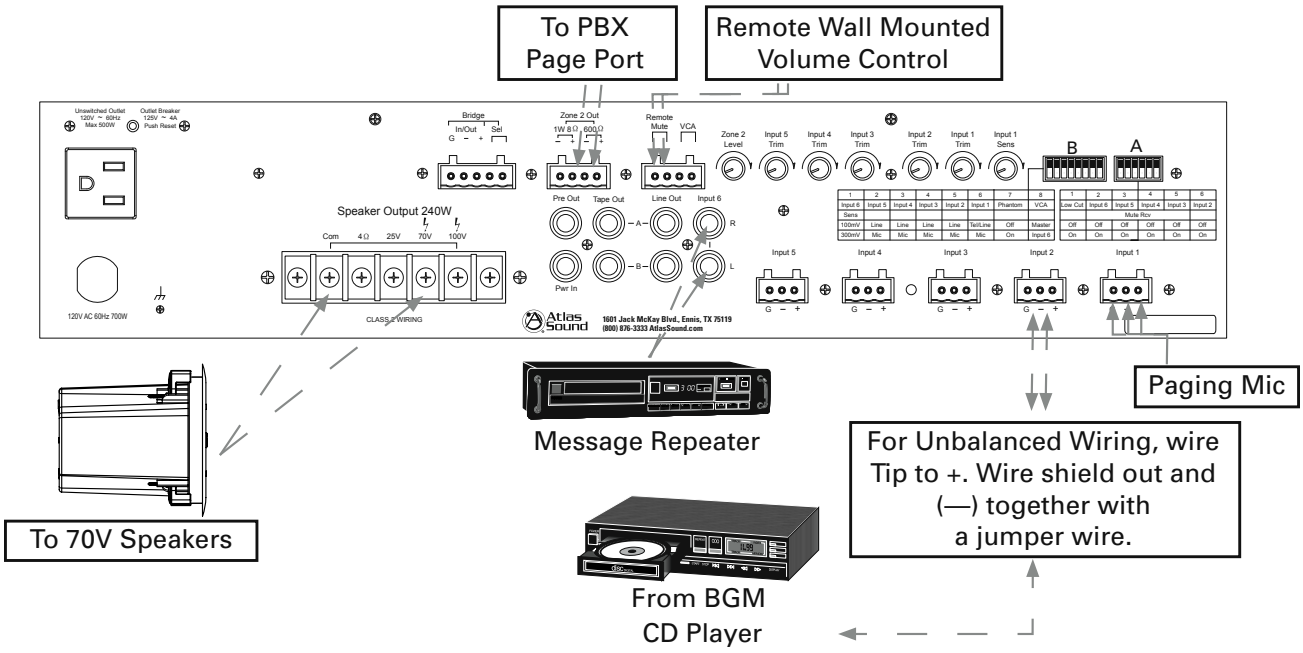
- Connect a paging mic to INPUT 1. Set Dipswitch "B" #6, "Input 1" to the "Mic" position.

  Note: The INPUT 1 Trim and Sens will need to be adjusted after all the settings and connections have been set.
- Connect a BGM (CD) player to INPUT 2.
- Set Dipswitch "A" #6, "Mute Rcv" to the "ON" position.
- Connect a Message Repeater or MOH device to INPUT 6.

  Note: The input sensitivity of this channel may need to be changed for proper level balance. Dipswitch "B" #1, "Input 6" allows you to select between a 100mV or 300mV input sensitivity. Turn down channel 6 gain control on the front panel.
- Connect Zone 2 output to the MOH input on your telephone. Adjust the Zone 2 Output level as needed.
- Connect a wall mount volume control (Atlas Part Number AAVC-10K) to the terminals marked "VCA". Set Dipswitch "B" #8, "VCA" to "Master".

Dipswitch Settings

Dipswitch 1	*Off (Set To The Required Gain)*	Dipswitch 2	*Off (Not Affected)*
Dipswitch 3	*Off (Not Affected)*	Dipswitch 4	*Off (Not Affected)*
Dipswitch 5	*Off (Line)*	Dipswitch 6	*On (Mic)*
Dipswitch 7	*Depends On Mic Type*	Dipswitch 8	*Master*



Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Example 2 — Hotel Room Combining Using Two AA240s

This example utilizes the combining feature of the Atlas AA240 mixer amplifiers. The drawing below shows the equipment connections for two hotel ballrooms, separated by a moveable air wall. The hotel needs to be able to have the audio system operate as one large unit (air wall open) or two discreet systems (air wall closed). As indicated in the example, a BGM CD player is shared between the two AA240s, via a "Y" cable, connected to input 6 of each mixer amp. The Bridge terminals of both amplifiers are connected together, through a DPST switch that makes (combines) or breaks (separates) the Bridge connections between the amplifiers. When the switch is closed, any audio signal into either amp will be present at both amplifier's speaker outputs. A volume control and DPST switch (see drawing for clarity) controls the background music level and turns the music on or off in each room. For emergency evacuation purposes, a signal from the hotel's fire alarm system is connected to channel 1 of both amplifiers, with the mute sensitivity adjusted as needed. All other channels are set for mute receive and will mute when the siren tone is present on channel 1.

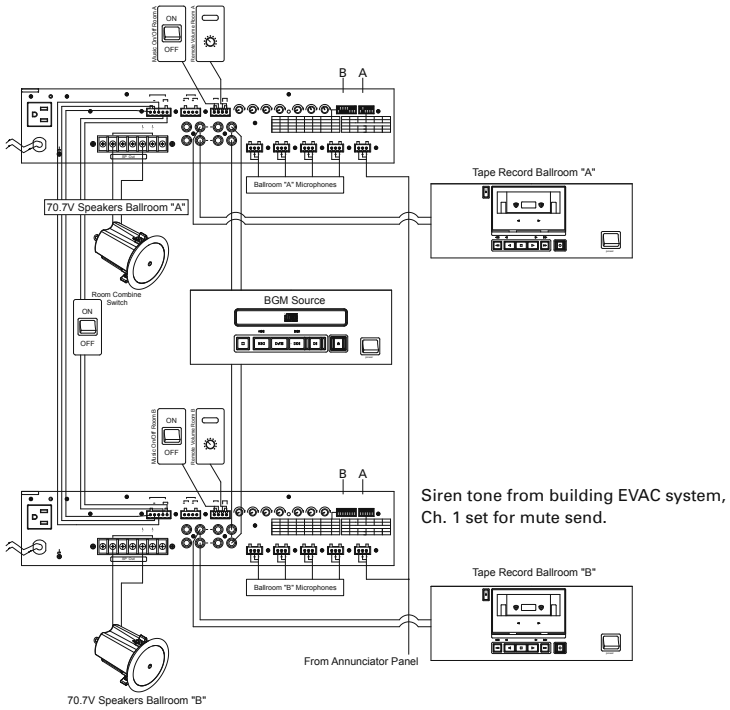
Dipswitch Settings

Dipswitch "A" 1–6

Dipswitch 1	*On*	Dipswitch 2	*On*
Dipswitch 3	*On*	Dipswitch 4	*On*
Dipswitch 5	*On*	Dipswitch 6	*On*

Dipswitch "B" 1–8

Dipswitch 1	*(Set To The Required Gain)*	Dipswitch 2	*Mic*
Dipswitch 3	*Mic*	Dipswitch 4	*Mic*
Dipswitch 5	*Mic*	Dipswitch 6	*Mic*
Dipswitch 7	*Depends On Mic Type*	Dipswitch 8	*Will depend if the remote volume control will control just the BGM or be a Master Volume Control.*



Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Example 3 — Small House of Worship

The diagram below shows a typical small House of Worship audio system. This system utilizes four microphones, one for the pulpit and three on the choir. A Master cap volume control (Atlas Sound AAVC-10K) is connected to the "VCA" terminals for overall level control. For background music, a CD player's audio outputs are connected to Input 6, and a recording device (cassette recorder or computer's audio input) is connected to the Tape Out jacks. For system tuning, a ⅓ octave graphic EQ is connected to the Pre Out / Pwr In jacks.

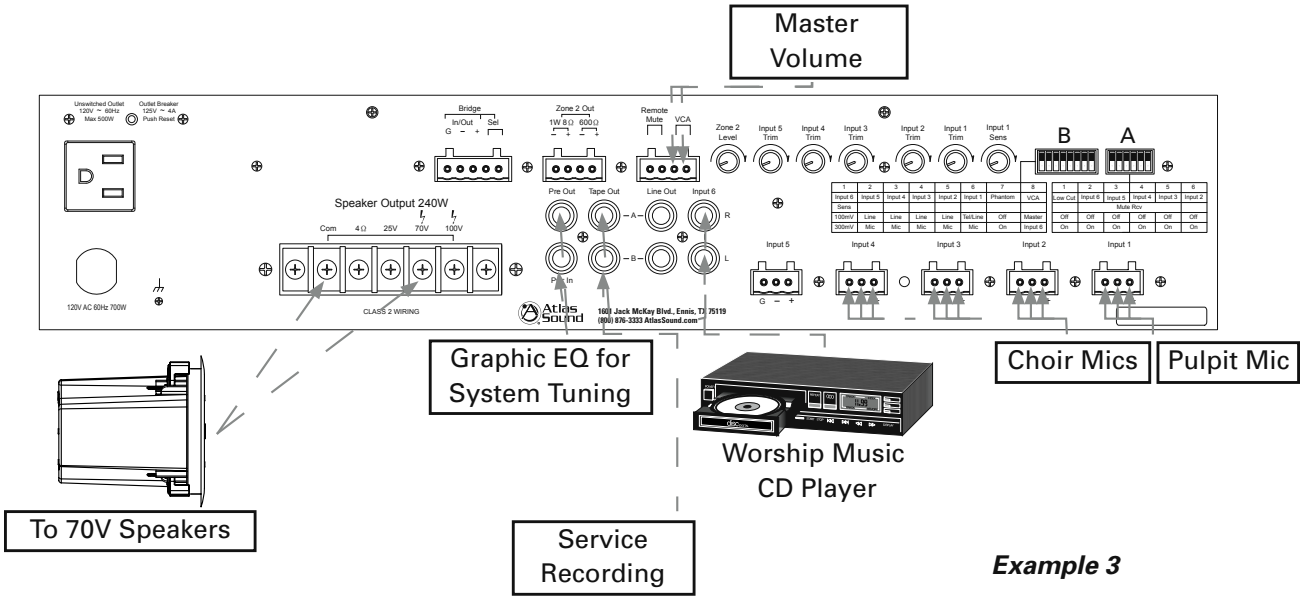
Dipswitch Settings

Dipswitch 1	*On*	Dipswitch 2	*On*
Dipswitch 3	*On*	Dipswitch 4	*On*
Dipswitch 5	*On*	Dipswitch 6	*On*

Dipswitch "A" 1–6

Dipswitch 1	*300mV*	Dipswitch 2	*"Not Used"*
Dipswitch 3	*Mic*	Dipswitch 4	*Mic*
Dipswitch 5	*Mic*	Dipswitch 6	*Mic*
Dipswitch 7	*Depends On Mic Type*	Dipswitch 8	*Master*

Dipswitch "B" 1-8



Example 3

Specifications are subject to change without notice.

Wiring the AA240

Speaker Outputs - Use 2 conductor unshielded wire of the appropriate gauge. If you are unsure about this, contact Atlas Sound Tech Support at 1-800-876-3333. Make sure you know how many speakers you need and what tap value you intend to use.

Mic/Line Input - Use 2 conductor w/ shield for low level signals of 20–22-gauge is best. Maintain the proper polarity, + to +, – to –, and shield to ground. For unbalanced signals, connect the (G) to the (–) terminal.

Unbalanced Inputs and Outputs - Pre-made RCA cables can be purchased from vendors to simplify interconnection to external devices.

Zone 2 Out - Use 2 conductor, 20–22-gauge, shielded is best. Terminate the shield at the input to the device if possible.

Load Consideration and Overload LED

The Overload LED will illuminate Yellow if the amp has sensed an improper load or the input signal is to high.

If the Overload is triggered the amp will not pass any signal for 10 seconds and will reset itself. If the amp continues to sense a improper load or signal the amp will continue to cycle off if the load issue is resolved. It is highly recommended not continue for any period of time without correcting the fault condition. If you continue to operate with the Overload Yellow LED on, damage may occur. Refer to page 16 of manual for protect conditions.

In most situations when the LED is illuminated it means the speaker system load to the amp is lower than what the amp is rated for. This usually is detected when you first are setting up the system. Below are a few load conditions to check for if the Protect light is on.

1. Connected to the wrong speaker terminal.
   Always check the speaker terminal to the type of load you are using. Example: If you are installing a 70.7V system make sure the wires are connected to the 70V and common (COM) terminals.
2. Too many speakers connected to the amp.
   This is a very common mistake. If you are using a 240W amp and using the 70.7V speaker terminals, add up the number of speakers and their wattage selections at the speaker. If they exceed 240W you must retap the speakers or remove the correct amount speaker wattage until the wattage is 240W or less. Example: If you are using a 30W tap you can only connect 8 speakers to the amp. If you are using the 7.5W tap, you can connect 32 speakers. If you have too many speakers on the amp it will load the amp down, causing excessive current demand and will trigger the Protect circuit.
3. Wrong speaker tap selection.
   It is also common in set up that in a 70.7V system one of the speakers is set to low impedance (8Ω) and not a 70.7V tap. This only takes one speaker to load the amp down incorrectly.
4. Short in system.
   This is common if the wire is run in metal conduit and the wire got nicked during the wire pull.
5. Speaker Level Controls.
   If a L-PAD or stepped attenuator is wired wrong it can also load a system down.

Specifications are subject to change without notice.

Measuring Speaker Loads

Below is an ipedance load chart for the AA240. When measuring the load impedance prior to connecting the load to the amplifier, the enclosed load chart will provide you the information to determine if the load or speaker system impedance is too low for the amplifier's rating. In every install it is always recommended to measure the load first to be sure the system was installed correctly.

AA240 Max Load Chart

Speaker Tap	AA240
4Ω	4Ω
25V	2.6Ω
70.7V	20Ω
100V	41Ω

Measuring a Speaker System's Impedance.

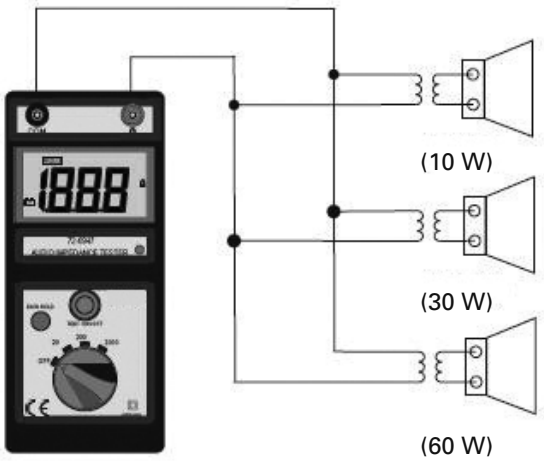
Note: It is important to only use an Audio Impedance Meter and not a conventional volt/Ω meter.

A true audio frequency impedance meter is essential for reliable installation of background music and paging systems in residences, offices buildings, and public areas. Avoid costly service calls and amplifier damage by verifying actual speaker system impedance prior to operation. Unlike conventional volt/Ω meters, which measure DC resistance, an Audio Impedance Meter unit utilizes an internal frequency oscillator to measure true impedance. It may also be utilized with 25V/70.7V and 100V speaker line transformers, L-pads and matching impedance volume controls. There are several Audio Impedance meters on the market, if you need to buy one we suggest going to MCM Electronics or search the internet for Audio Impedance Meter.

Measuring 25V/70.7V Distributed Speaker Systems

Large distributed systems typically utilize 25.2V or 70.7V transformers (50V and 100V in Europe), to greatly ease the connection of multiple speakers and facilitate long cable runs. These speakers are connected in parallel, as shown below, with total wattage ratings added to calculate the overall rating of the system. Connecting this meter to a speaker arrangement such as this will provide the overall impedance of the system. Using the following formula you can calculate the wattage. Simply put, when connected to a distributed system, take the voltage of the system (normally 70.7V or 25.2V), squared, divided by the impedance displayed on the meter. Your answer will be the total system wattage. This total wattage must not exceed the wattage output rating of the amplifier or damage may occur. In this example the measurement for a 70.7V design with speakers of 10W, 30W and 60W, the system impedance would measure close to 50Ω. Formula 70.7V x 70.7V = 4998, 4998 / 100W = 49.9Ω. If this speaker system load is connected to at least a 120W amp @ 70.7V, the system will operate properly.

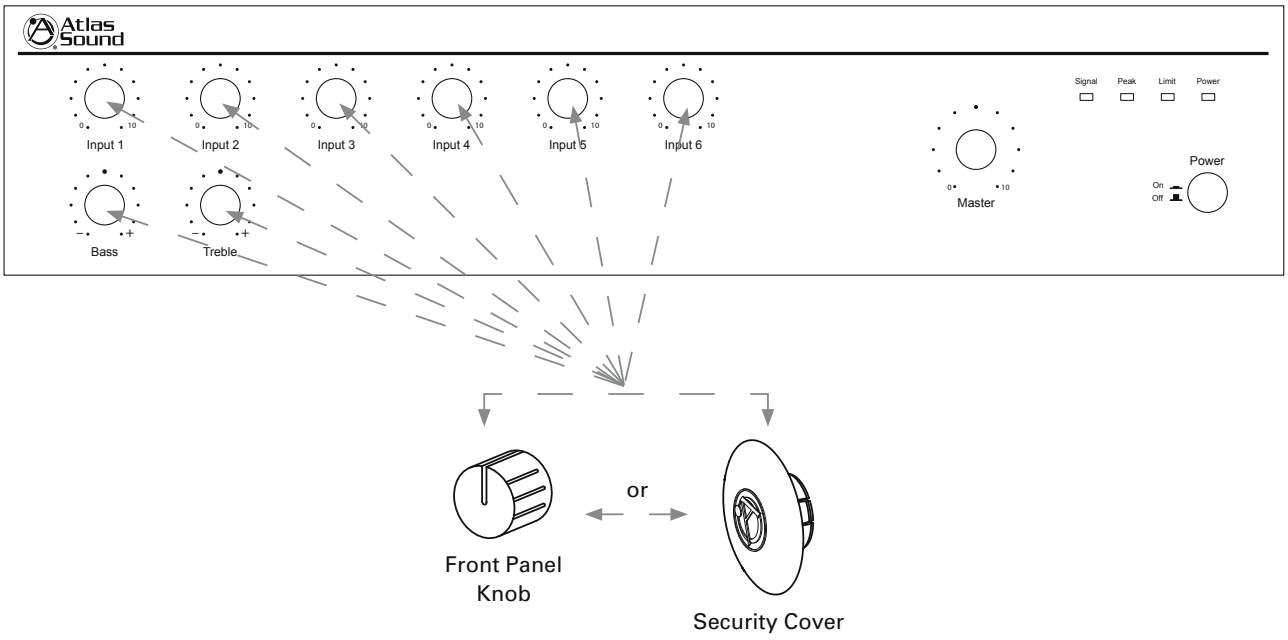
Note: It is always recommended to use a larger amp than needed with output power headroom of at least 25%.



Specifications are subject to change without notice.

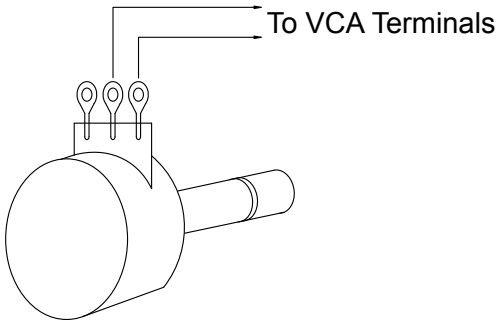
Security Covers Option

In order to prevent unauthorized operation of the AA240, optional security covers are available which take the place of the front panel knobs. After the AA240 has been installed and is operating as desired, grasp the front panel knobs and pull straight out from the front panel. Replace the knobs with security covers, Atlas Sound part number AAVCC-5 available in quantities of 5.



Wiring the AAVC-10K VCA Potentiometer

Atlas part number, AAVC-10K, consists of a single gang "Decora style" wall plate with a pre-mounted 10K potentiometer and knob. Use two conductor unshielded wire connecting the pot terminals to the terminals marked "VCA" on the back of the amp.



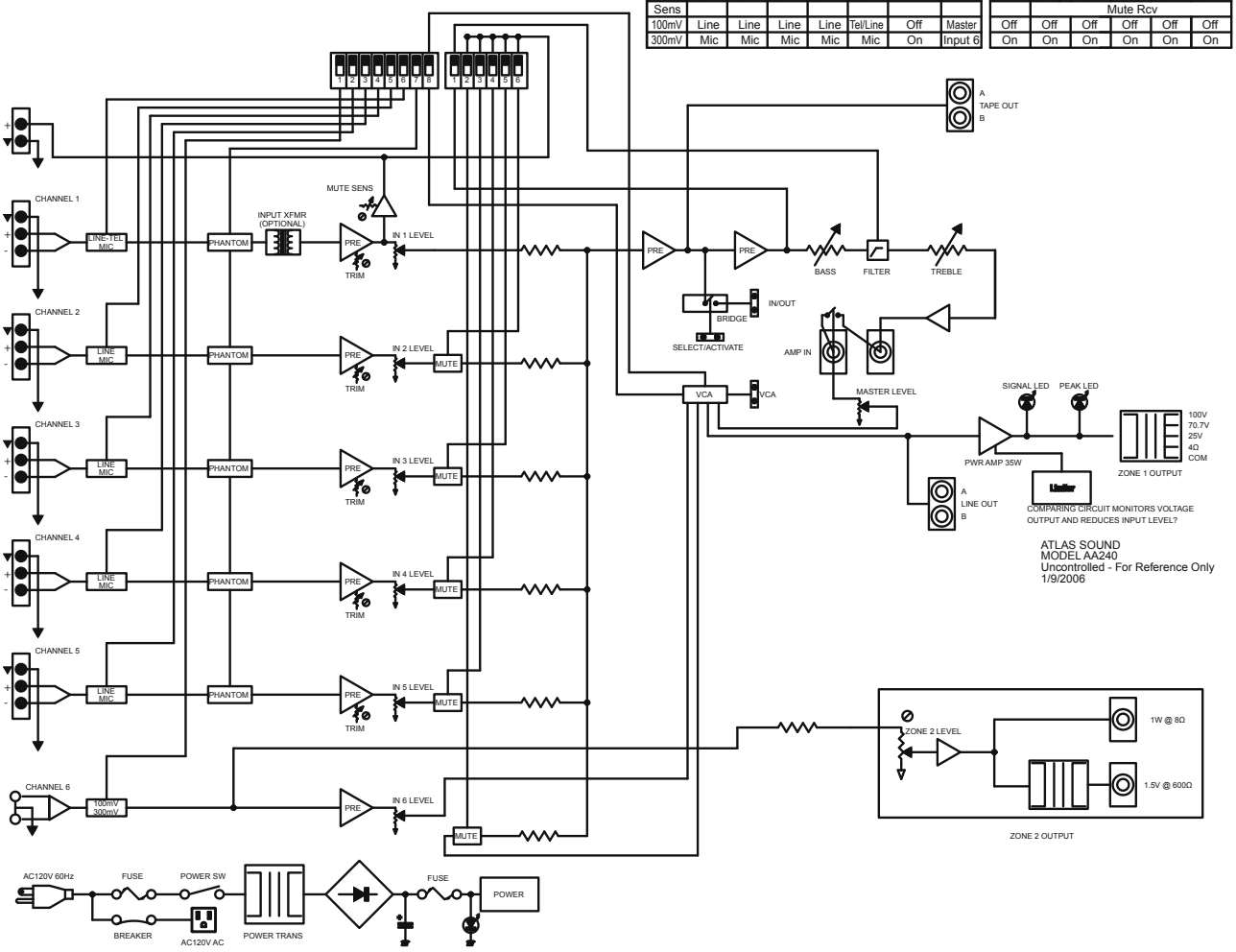
Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

AA240 Block Diagram

1	2	3	4	5	6	7	8
Input 6	Input 5	Input 4	Input 3	Input 2	Input 1	Phantom	VCA
Sens							
100mV	Line	Line	Line	Line	Tel/Line	Off	Master
300mV	Mic	Mic	Mic	Mic	Mic	On	Input 6

1	2	3	4	5	6
Low Cut	Input 6	Input 5	Input 4	Input 3	Input 2
	Mute Rcv				
Off	Off	Off	Off	Off	Off
On	On	On	On	On	On

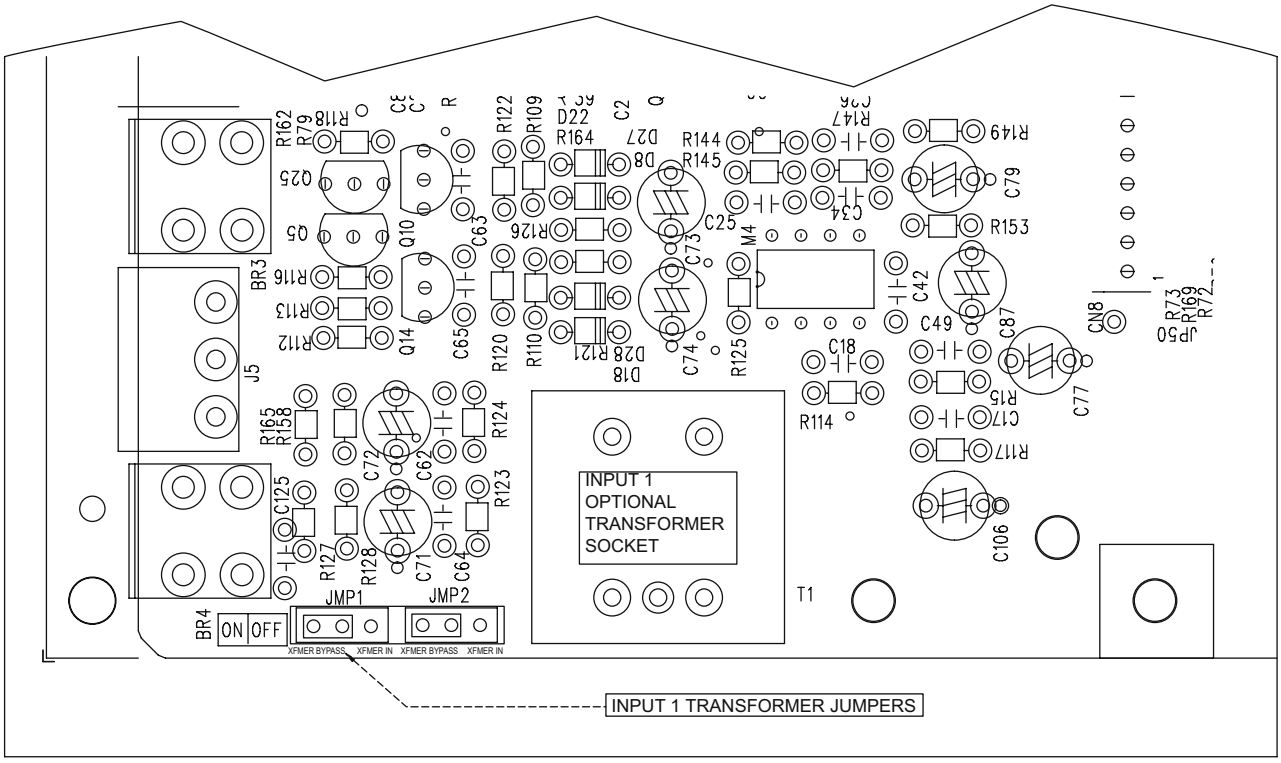


Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Optional Input Transformer Installation

Contact Atlas Sound at 1-800-876-3333 for price and availability.



(p/n AAIT-600)

Specifications are subject to change without notice.

Specifications

Power Output	Max. Average Power @ 50Hz-20kHz with .5% THD (10-80kHz filter) 4Ω, 1kHz, 240W RMS		
Transformer Outputs	25V	AA240	240W RMS
	70.7V	AA240	240W RMS
	100V	AA240	240W RMS
Frequency Response	50Hz – 20kHz		
Distortion	<1% at rated power (1kHz)		
Sensitivity	Input 1	Line/Tel	316mV (-10dBV) 10kΩ (600Ω with optional transformer)
		Mic	.316mV~3.16mV (-50dBV~ -70dBV)
	Inputs 2-5	Line	316mV (-10dBV) 10kΩ
		Mic	.316mV~3.16mV (-50dBV~ -70dBV)
	Input 6	Line	300mV/100mV (-10dBV/-20dBV) Selectable
Outputs	Main:	Transformer coupled, balanced, 4Ω, 25V, 70V, and 100V	
		Zone 2- 8Ω	Unbalanced 1W
		Zone 2- 600Ω	Balanced 1.5V
Signal To Noise Ratio	Mic	>55dB	
	Line	>55dB	
	Telephone	>75dB	
Tone Controls	Bass	±6dB @ 100Hz	
	Treble	±6dB @ 10kHz	
Indicators	Power, signal, peak limit		
Power Consumption	700 Watts		
Height	4.219" (107mm)		
Width	16.54" (420mm)		
Depth	14.06" (357mm)		
Weight	27.85 lbs (12.63kg)		

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Notes

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Notes

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

Notes

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.

All products manufactured by Atlas Sound are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all Atlas Sound products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. Atlas Sound will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to Atlas Sound do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLAS SOUND SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Atlas Sound does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Should your AA240 Mixer Amplifier require service, please contact the Atlas Sound warranty department at 1-866-689-8055, ext. 277 to obtain an RA number.

Atlas Sound Tech Support can be reached at 1-800-876-3333.

Visit our website at www.AtlasSound.com to see other Atlas products.

©2008 Atlas Sound L.P. All rights reserved. Atlas Sound and Strategy Series are trademarks of Atlas Sound L.P.
All other trademarks are the property of their respective owners. ATS002187 RevA 12/08

Atlas Sound
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.
Telephone: 800.876.3333 • Fax: 800.765.3435

Specifications are subject to change without notice.