

**WARNING!**  
**DANGEROUS VOLTAGE**  
**PRESENT INSIDE**

**Warning:** This amplifier should never be opened or the cabinet removed except by a qualified technician. The circuit board of this unit is equipped with high voltage warning lights. If these or any other lights on this amplifier are lit use extreme caution.



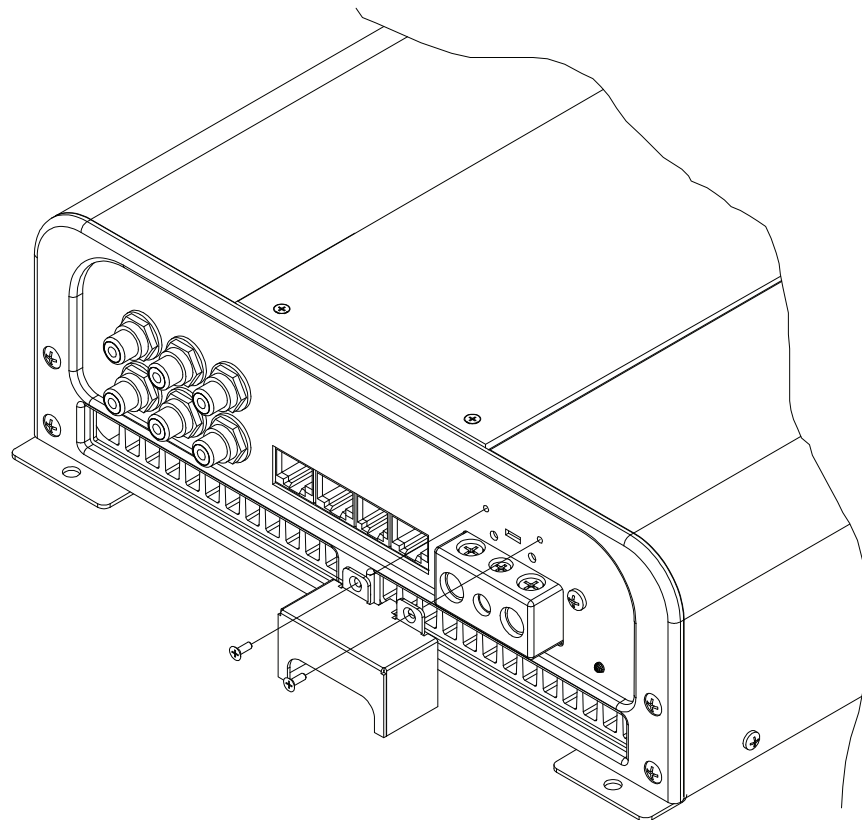
*Signature Edition*

*By Robert Ziff*

**4000SE**

**Warning:** The voltage at the speaker terminal on the 4000se can be high enough to be dangerous. Use caution when working with any speaker connection on the 4000se.

This Amplifier is equipped with a Speaker terminal cover interrupter. If the terminal cover is removed the unit will shut down and will display a code 11 (1 flash followed a second later by 1 flash) on the logo and remote level control LED. It will not turn back on until The cover has been replaced.





***4000 SE***  
**MANUAL AND USER GUIDE**



By *Robert Johnson*

"This is the finest amplifier I have ever made."

## **Congratulations!**

Thank you for purchasing an ARC Audio Signature Edition amplifier.

This amplifier was designed by Robert Zeff to the highest standards and using only the finest components. No compromises were made at any point in the design or manufacture of this product.

**“This is the Finest Amplifier I have Ever Made”**



A car is the most challenging place for an amplifier. The battery voltage is constantly changing and full of noise. It has to operate in an extreme range of temperature. The signal from the headunit passes every noise producing device in the car before reaching the amp. It's no wonder people are so often disappointed with the end result.

No one understands these problems better than we do and no one has more experience engineering an amplifier to work properly in this very challenging environment.

### **Warning**

***We build all ARC Audio products to play at high volumes for extended periods of time. However your ears are not designed for high volume listening. This product can easily generate volumes that can permanently damage your hearing. We urge you to limit your exposure to very high volume sound.***

***You may also find your state has laws governing the volume of an audio system in a car. Please be aware of all local and state laws in your area.***

***A properly tuned and operated audio system will deliver years of enjoyment when used properly.***

***ARC Audio and Robert Zeff take no responsibility for any personal loss, damage or injury associated with the use of this product.***

### **Installation Instructions**

ARC Audio Signature Edition Amplifiers are designed for easy installation in your vehicle. To ensure proper operation of your new purchase, please follow the suggestions we have listed below:

### **Warning**

***Please check the suitability of the installation location before you begin. Do not cut any of the car's structure. Pay close attention to what is behind the panels or carpet. Often the manufacture will hide wires, computers or other electronic devices in the exact areas you wish to install in.***

***If you do not have experience with automotive electrical and mechanical systems contact a professional installer. Paying a qualified installer is almost always cheaper than paying a dealership to repair your car.***

### **Locating the Amplifier**

The amplifier must be securely mounted to a solid surface. Please select a dry location in the trunk or passenger compartment only. Do not mount the amplifier to any area that may have excess vibration (like the subwoofer box). Position the amplifier in an area that receives sufficient airflow for proper heat dissipation.

### **Supplying Enough Power**

#### **The Laws of Nature**

Your amplifier Does NOT make power. It converts power, or current, from your cars electrical system and turns it into a high power musical energy. If the amp can't get all the power it needs it will not produce its full output. Your ARC Audio amplifier will produce full output for longer than other amps on the market today. If the Voltage or Current drops too low even our amplifiers will drop below their rated output. Make sure your vehicle charging system is in good working order. Any Hi-Performance audio amplifier will increase the demand on your alternator and battery. If you are unsure have your charging system tested by a professional technician.

#### **The Ground!!!**

Warning: Read this Carefully

The ground wire should be connected directly to the chassis of your vehicle. Find a clear location close to the amplifier and remove all the paint and sound deadener. Use a #10 or larger screw to secure it. Never use seat belt bolts for grounding. Remember, the ground must carry the same high current as the positive power wire.

***Warning: Some vehicles use alloys in their constructions that DO NOT offer a suitable ground. It is recommended that you test the resistance between the battery and the grounding point with an ohm meter. If it does not fall below 1 ohm you should look for a alternative grounding point.***

To reduce the risk of noise, run all signal cables away from any vehicle or power supply wiring.

### **Running the Cables**

Carefully run the power and signal cables through the passenger compartment of the vehicle. Always use a rubber grommet to prevent the power wire from shorting and to reduce the risk of fire. Two (2) 1/0 gauge or larger wires should be used for power and ground connections. We recommend a fuse be installed on the power wire within 18 inches of the battery for safety.

### **Setting the Gains**

So you're worried that your high output head unit will be too much for the ARC Audio's input stage.

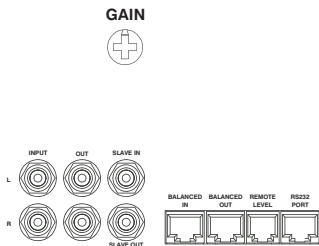
Don't Be

Music is very dynamic. Nothing like a 1KHz test tone. It would be rare to see a peak as high as a test tone. Furthermore, your head unit produces its output at full volume but when you tune your system you typically set the head unit to 70% of maximum volume.

## Input Section

Because of the wide range of head unit output configurations all ARC Audio amplifiers have an adjustable input sensitivity or "Gain". The gain is not a volume or a power limiting control like a throttle. It makes the amp more sensitive to input from the stereo. With the gain up the amp will reach full output at a lower volume setting on the deck. At higher gain settings the amp also becomes more sensitive to noise from the car's electrical system. Try to run the gain at the lowest setting possible for you system.

There is no correct gain setting. Because speakers require different power demands to reach the same output, the gains most often need to be used to compensate for these differences. If you tried to set all the gains at half way you would probably find the system didn't sound very good. Using good judgment and listening carefully to each speaker is still the best way to tune a system.

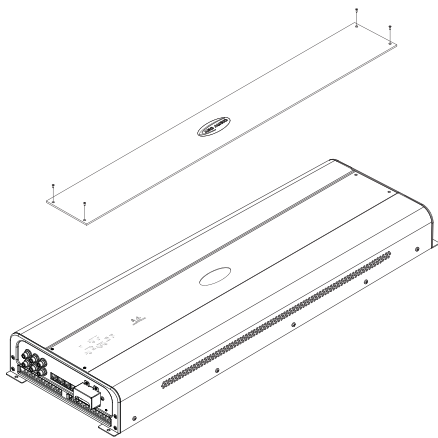


## Getting Access to Your Controls

The crossover and gain controls are located under the top plate on top of the amp. You must first remove the 4 attaching screws that hold the plate in place. Put them and the plate in a safe place for later.

When you have made all your adjustments replace the plate. You may wish to rotate it so the logo faces the desired direction.

Now all your controls are safe from dirt and accidental changes.



## Speaker outputs

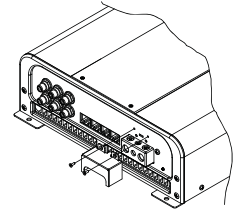
This amplifier is a mono design. Meaning it has only 1 channel. It is equipped with a single large block terminal for speaker connection. Make this connection carefully and neatly. If the wires ever come in contact with each other the amp will go into protection.

Know your total ohm load before you make any connections.

*Note Do Not attempted to run loads below 1 ohm.*

**Warning: The voltage at the speaker terminal on the 4000se can be high enough to be dangerous. Use caution when working with any speaker connection on the 4000se.**

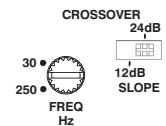
**This Amplifier is equipped with a Speaker terminal cover interrupter. If the terminal cover is removed the unit will shut down and will display a code 11 (1 flash followed a second later by 1 flash) on the logo and remote level control LED. It will not turn back on until The cover has been replaced.**



The Robert Zeff Signature Edition incorporates a highly advanced audiophile crossover. The 4000se is equipped with a fully adjustable Low Pass crossover with either 12dB or 24dB slope.

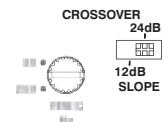
## Crossover Controls

A crossover is a device that removes unwanted frequencies from a speaker or amplifier. A tweeter can easily be destroyed by bass notes if they are not filtered out. Likewise a subwoofer will not sound natural if it is playing midrange notes. A crossover removes these sounds from the speaker. As you might guess, careful adjustment is need to ensure that all the speakers are playing the right sounds and that you are left with no "holes" or low spots in the frequency response.



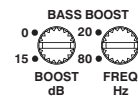
## Crossover Slope

The 12dB/24dB switch is used adjust how fast the crossover removes unwanted frequencies. 24dB will filter out sound twice as fast. EXAMPLE: You set a LOW PASS crossover at 50Hz using the 12dB mode. At 1 octave above the crossover point the sound will be 12db quieter. By adjusting the slope you can change it to 24dB quieter.



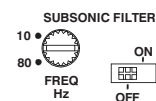
## Bass Boost

This amp has a fully adjustable bass boost. Both the frequency and the level of the boost are adjustable. Start with a small increase in the level control. Then "sweep" the frequency up and down. Listen carefully for an improvement in the sound of the bass. If you do not hear any improvement then the woofer does not need any boost. Use Bass Boost carefully. The demands on power output are tremendous. Try to minimize the use by changing woofer position or the enclosure size.



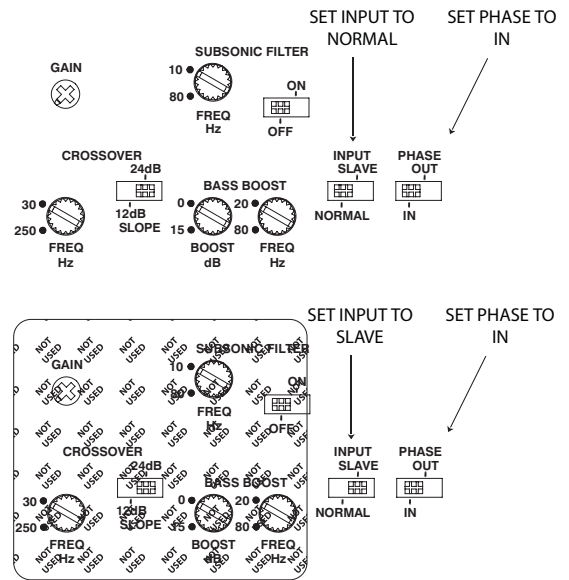
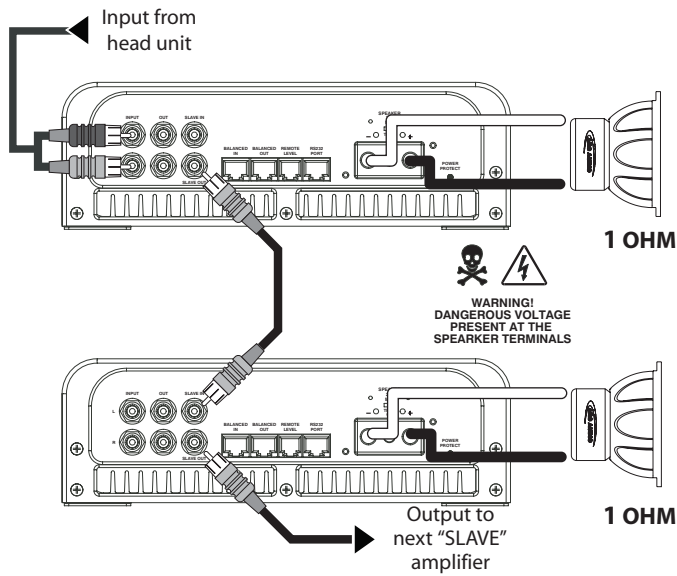
## Subsonic Filter

A subsonic filter acts like a crossover but at very low frequencies. It removes sound that is so low the speaker cannot reproduce it. You see the cone moving but hear no sound. This can be very hard on your woofer especially at high power. If you are using a ported subwoofer enclosure at high power you should use a Subsonic Filter to limit cone movement at very low frequencies.



## MASTER/SLAVE

The 4000se is equipped with a MASTER/SLAVE circuit. This allows you to control 2 or more amplifiers from one set of controls. All of your gains, crossovers, bass boost, subsonic filter and remote level will be controlled from a single "master" amplifier. This eliminates all the tedious gain and crossover matching normally needed when using multiple amplifiers.



## Bridging

Bridging is a way to combine the power of 2 channels into 1. When you wire the amp bridged you have a higher voltage differential between + and -. That means MORE POWER. If you have 2 identical, properly designed mono amplifiers (They can not be a stereo amp that is bridged internally) you can bridge them together to create 1 channel.

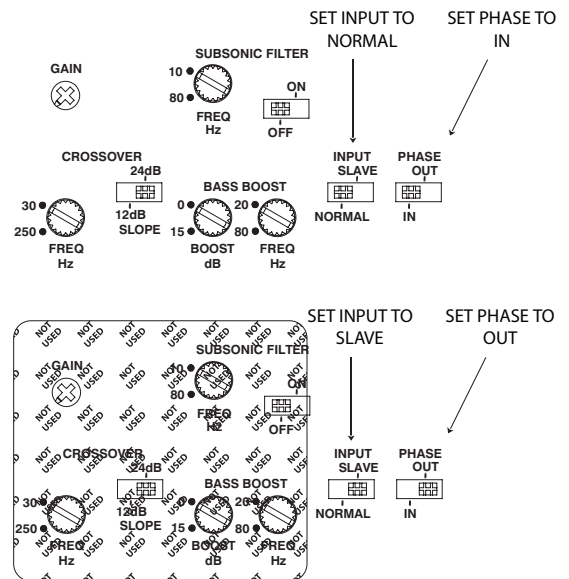
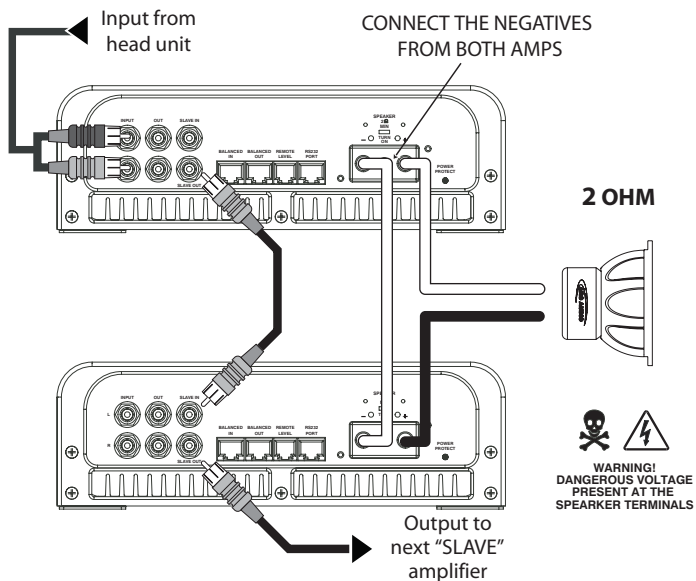
### Warning

When bridging any amp or amps, each channel sees half the ohm load. 4 ohms bridged is the same as 2 ohms stereo. 1 ohm bridged is equal to 1/2 ohm stereo. Check the compatibility of you woofers and amplifier before you begin.

2 - 4000se amplifiers in a bridged configuration must not be connected to a load lower then 2 ohms.

For bridging to work both amplifiers must be playing exactly the same signal at exactly the same output level. To make this easier use the "MASTER" and "SLAVE" as above but the slave amp must be set to "Out of PHASE"

Use the configuration below.



## Installation Instructions

1. Disconnect the negative cable from the car battery. Tape up the end so it is isolated from the battery.
2. Run the power wire (1/0 X2 AWG min.) from the front battery to the rear battery bank using a min. 500 amp fuse at both ends. Connect 2 1/0 AWG wires to the amplifier using a 500 amp fuse. Plan this part of the installation carefully. This cable will carry very high current. If it should short to the body and it is not properly fused it could catch fire.
3. Connect the power wire to the battery using a fuse capable of the total current load of all amplifiers connected. Don't install the fuse yet. Wait until the end. Locate the fuse as close as possible to the battery. If the fuse is further than 18 inches (wire length) from the battery you should reevaluate the wire and fuse placement.
4. Find the closest clear metal area to the amp for a ground. Sand, grind or scrape all paint and under coating from the body and screw the ground securely to the body.
5. Run the speaker wire to the speakers. It is advised that you leave some extra wire at this point. You can "clean it up" later.
6. If you haven't already done so, mount the amp now.
7. Connect the power and ground to the amplifier.
8. Connect the remote wire from the head unit to the amplifier. Now is a good time to turn on the amp for the first time. Make sure it turns on properly and does not go into protect.
9. Connect the speaker wire to the amp and speakers (make sure the amp is off first). Make sure the polarity (+ and-) is correct.
10. Connect the RCA's to the amp.
11. Double check the amplifier controls at this time. Make sure everything is set correctly for your system.
12. Now you're ready to play it for the first time. It is best to leave the gain all the way down at first. Start with the head unit volume low and work your way up.
13. Now you can tune the amp. Take your time and make only one adjustment at a time. It may take some time to get the system fully adjusted. During this time the amp is drawing current from the battery. You should check the battery voltage from time to time and re-charge it if it gets low. Battery voltage can affect the way the amplifier performs.
14. You're done. Now have fun.

**WARNING: The ground connection to the body must be capable of handling 500+ amps of current.**

*It is advisable to test the ground with an ohmmeter between the ground cable and the negative battery cable to insure a good low resistance connection. Some alloys used in modern cars do not offer the best ground. If you believe this is the case consult with the vehicle manufacturer.*

5. Run the speaker wire to the speakers. It is advised that you leave some extra wire at this point. You can "clean it up" later.
6. If you haven't already done so, mount the amp now.
7. Connect the power and ground to the amplifier.
8. Connect the remote wire from the head unit to the amplifier. Now is a good time to turn on the amp for the first time. Make sure it turns on properly and does not go into protect.

**Only after this step should you install the fuse at the battery.**

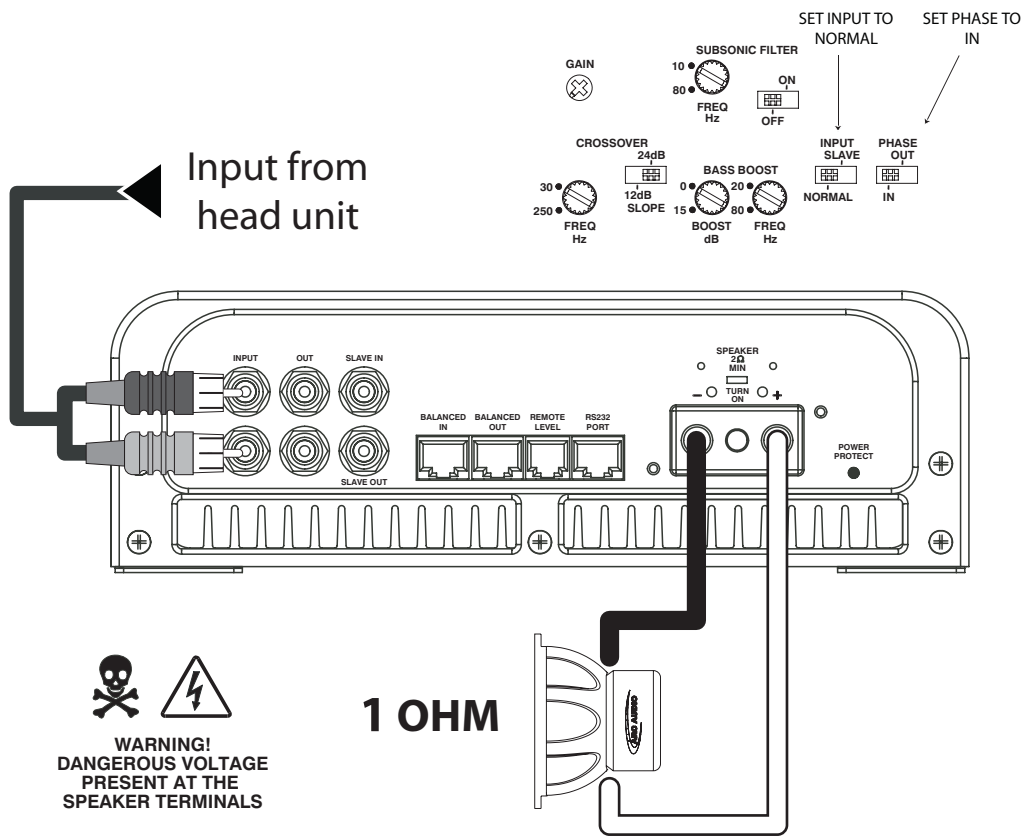
This amplifier is equipped with an advanced diagnostic system controlled by the microprocessor. In the event that this unit goes into protection for any reason it will flash the status light found on the control end of the amplifier. The different sequences indicate the "Code" for faster troubleshooting.

- |   |  |
|---|--|
| <b>Code 11</b><br>1 Flash pause 1 Flash         | <b>Speaker Cover Off</b> The 4000se will not play without the speaker safety cover in place.   |
| <b>Code 12</b><br>1 Flash pause 2 Flashes       | <b>Short Protection</b> The amplifier has detected a short circuit and shut down to avoid damage.                                    |
| <b>Code 13</b><br>1 Flash pause 3 Flashes       | <b>Repeated Short</b> The amplifier is detecting and constant short circuit condition and will not turn back on until it is resolved |
| <b>Code 14</b><br>1 Flash pause 4 Flashes       | <b>Over Volt Protection</b> The battery voltage is usually high and could damage the amplifier.                                      |
| <b>Code 15</b><br>1 Flash pause 5 Flashes       | <b>High Voltage Supply Failure</b> Return the amplifier to your local ARC Audio Dealer for service.                                  |
| <b>Thermal</b><br>2 Red Flashes 2 Green Flashes | <b>Thermal Over Heat Protection</b> Contact your Doctor. You have to be Hurting.   |

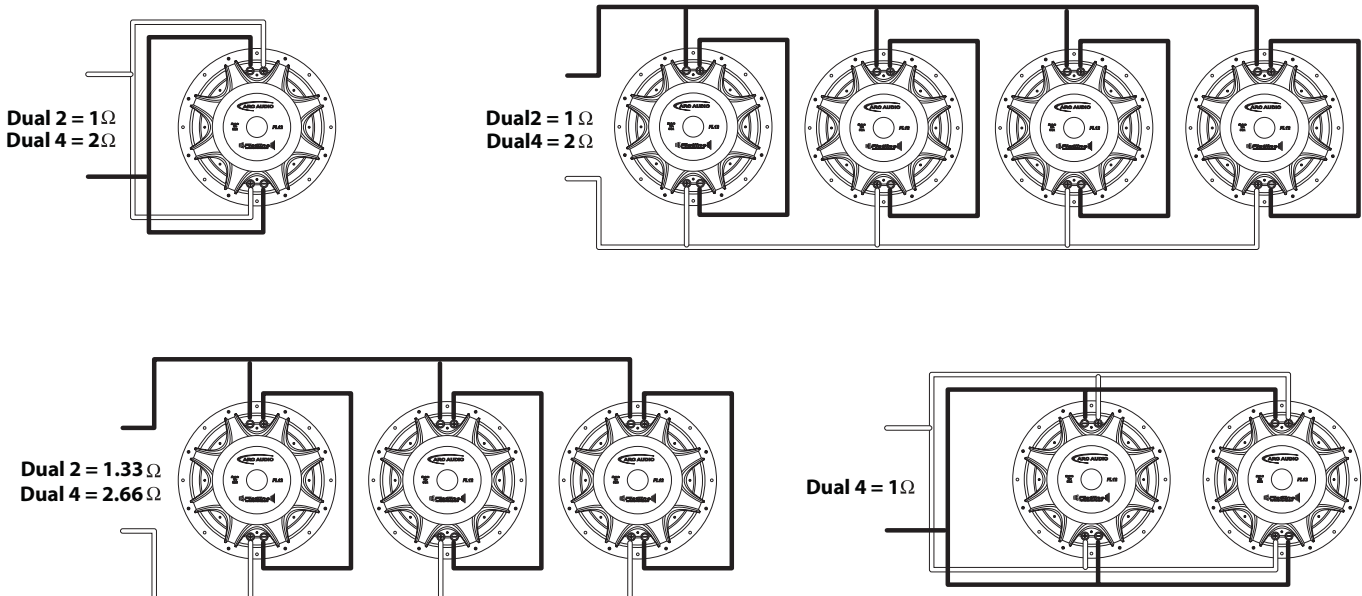


## TYPICAL CONFIGURATION

In most cases the 4000se will be configured like the example below. Because woofers rated at 4000 watts are uncommon you will probably be running multiple subs on 1 amplifier. It is recommend that you find a combination with a final ohm load between 1 and 2 ohms. Do not attempt to run loads below 1 ohm.



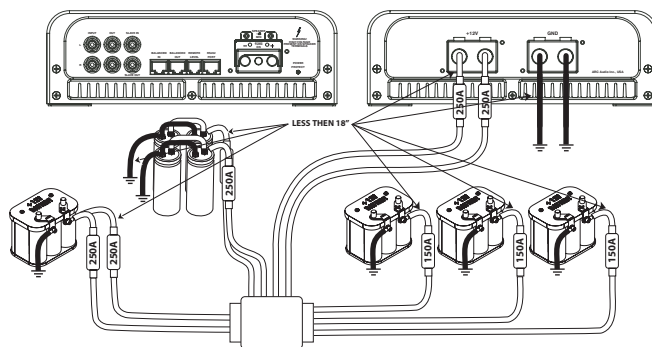
## POSSIBLE WOOFER COMBINATIONS



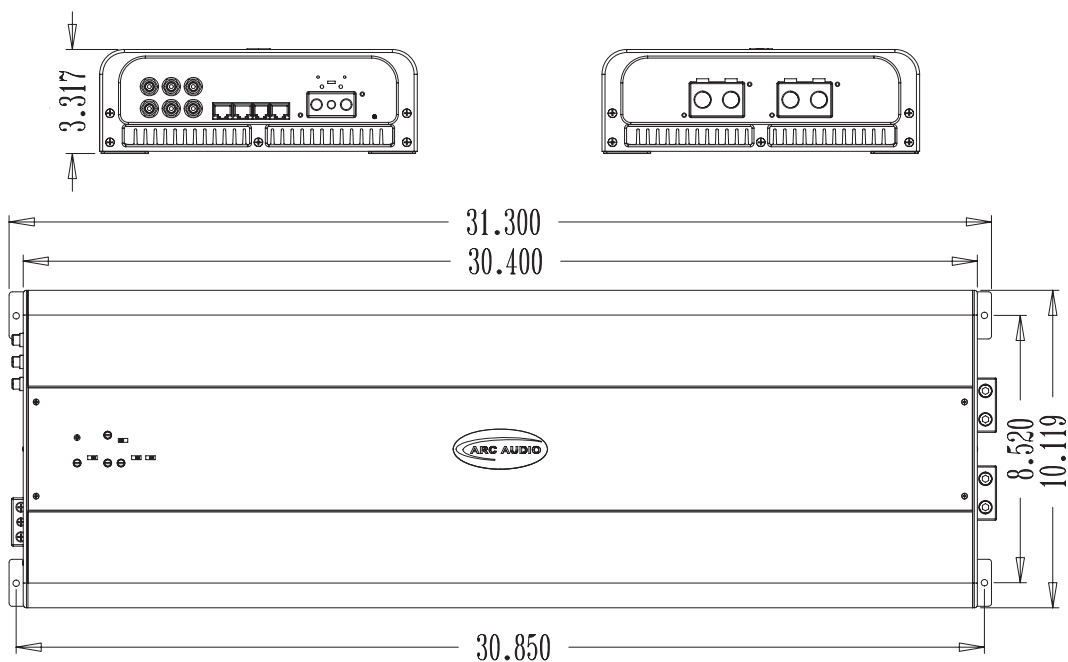


# P O W E R

THIS IS A TYPICAL ELECTRICAL SYSTEM FOR THE 4000se  
YOUR FINAL ELECTRICAL SYSTEM MAY DIFFER FROM THIS.



## D I M E N S I O N S



## S P E C I F I C A T I O N S

4 Ohms @ .05% THD	1 X 1200 Watts
2 Ohms @ .05% THD	1 X 2300 Watts
1 Ohms @ .05% THD	1 X 4000 Watts
1 Ohms @ 3% THD (TYPICAL)	1 X 5000 Watts
S/N Ratio @ 1 Watt	>80dB
Frequency Responce	4Hz-220Hz
Transient Distortion	<.005% @ 4 Ohms
Input Sensitivity RCA	0.2V-4.0V
Input Sensitivity Balanced	0.4V-8.0V
Damping Factor (25W @ 4Ω)	>1000
Current Draw(@1% THD)	450A
Input Impedence	10K Ohms
Bass Boost	+15dB@20Hz-80Hz
Crossover	LP 30hz-230hz

# LIMITED WARRANTY

ARC AUDIO warrants all new Signature Edition Amplifiers against defects in material and workmanship for a period of ONE (1) YEAR from the original date of purchase on all over the counter purchases not installed by an AUTHORIZED ARC AUDIO RETAILER. This warranty is extended to Three (3) YEARS if the product is originally installed by an AUTHORIZED ARC AUDIO RETAILER and is accompanied by a valid copy of the original receipt showing a charge for the installation. This warranty is not transferable and applies only to the original retail purchaser of the product from an authorized ARC AUDIO retailer. Upon inspection by ARC AUDIO should services be necessary under this warranty for any reason due to manufacture defects ARC AUDIO will, at its sole discretion, repair or replace the defective product with new or similar conditioned product at no charge.

**THIS WARRANTY DOES NOT COVER INSTALLATION OR DAMAGE RESULTING FROM ACCIDENT, MISUSE, ABUSE, IMPROPER WIRING, OPERATION OUTSIDE OF UNIT OUTSIDE OF MANUFACTURES SPECIFICATIONS, OR AGAINST INSTRUCTIONS IN OWNERS MANUAL. IN ADDITION ANY PRODUCT THAT HAS BEN OPENED, TEMPERED WITH OR MODIFIED, OR IF ANY SERIAL NUMBERS HAVE BEEN REMOVED WILL NOT BE COVERED BY ANY PART OF THE MANUFACTURES WARRANTY.**

All warranty returns should be sent to ARC AUDIO freight prepaid and must be accompanied by proof of purchase (a copy of the original sales receipt). Direct returns from consumers or non-authorized retailers will be refused unless specifically authorized by ARC AUDIO with a valid return authorization number. To receive a Return Authorization number call ARC Audio Warranty Department. Be prepared to give you name, address, phone number, model number and serial number of the defective unit..

**All warranty returns should be packed in original packaging and must be accompanied by a copy of the original sales receipt. Product damaged in shipment will not be covered under this warranty. The customer or retailer may choose to have this damage repaired at the normal “Out of Warranty” repair cost.**

In no event will ARC AUDIO be liable for incidental, consequential, or other damages resulting from the use of this product, this includes but is not limited to, damage of hearing, property or person, damage based upon inconvenience or on loss of use of the product, and to the extent permitted by law, damages for personal injury. This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. This warranty applies to products sold and used in the United States of America. In all other countries please contact your distributor.

**For warranty and non-warranty repairs, send to:**

**ARC Audio  
4719 Green Leaf Cr. #4  
Modesto CA, 95356  
209-543-8706**



[www.arcaudio.com](http://www.arcaudio.com)