

## SPECIFICATION

### VA2-1400D

2-ohm Stereo, 4-ohm Bridged Full Range Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
4Ch. Stereo Low Level RCA Inputs  
Variable 12dB High & Low Pass Crossovers  
12dB Treble Boost Increases Upper Octave Harmonics  
4g Power Wire & 8g Speaker Wire Outputs  
Frequency Response: 15-20k Hz  
Signal-to-Noise Ratio: 105dB  
120w x 2 @ 4 ohm  
200w x 2 @ 2 ohm  
400w x 1 @ 4 ohm  
Variable 120-3kHz 12dB High Pass Crossover  
Variable 50-250Hz 12dB Low Pass Crossover  
Bass Boost: 0-6-12dB  
Total Harmonic Distortion: 0.05%  
Input Sensitivity: 200mV-6V  
Dimension: 8.85" w x 1.89" h x 8.4" l

### VA4-1800D

2-ohm Stereo, 4-ohm Bridged Full Range Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
4Ch. Stereo Low Level RCA Inputs  
Variable 12dB High & Low Pass Crossovers  
12dB Treble Boost Increases Upper Octave Harmonics  
4g Power Wire & 8g Speaker Wire Outputs  
Frequency Response: 15-20k Hz  
Signal-to-Noise Ratio: 105dB  
100w x 4 @ 4ohm  
160w x 4 @ 2 ohm  
320w x 2 @ 4 ohm  
Variable 120-3kHz 12dB High Pass Crossover  
Variable 50-250Hz 12dB Low Pass Crossover  
Variable 5-20kHz 12dB Full Crossover  
Bass Boost: 0-6-12dB  
Total Harmonic Distortion: 0.05%  
Input Sensitivity: 200mV-6V  
Dimension: 8.85" w x 1.89" h x 11.73" l

### VA4-2200D

2-ohm Stereo, 4-ohm Bridged Full Range Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
4Ch. Stereo Low Level RCA Inputs  
Variable 12dB High & Low Pass Crossovers  
12dB Treble Boost Increases Upper Octave Harmonics  
4g Power Wire & 8g Speaker Wire Outputs  
Frequency Response: 15-20k Hz  
Signal-to-Noise Ratio: 105dB  
120w x 4 @ 4ohm  
200w x 4 @ 2 ohm  
400w x 2 @ 4 ohm  
Variable 120-3kHz 12dB High Pass Crossover  
Variable 50-250Hz 12dB Low Pass Crossover  
Variable 5-20kHz 12dB Full Crossover  
Bass Boost: 0-6-12dB  
Total Harmonic Distortion: 0.05%  
Input Sensitivity: 200mV-6V  
Dimension: 8.85" w x 1.89" h x 11.73" l

### VA1-8000D

1-ohm Stable Class D Monoblock Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
Low Level/RCA Input w/ Bridged Operation Outputs  
Variable 0-12dB Bass Boost  
Variable 40-180Hz Low Pass Crossover  
4g Power Wire & 4g Speaker Wire Outputs  
Dash Mount Remote Control Included  
2600w x 1 @ 1ohm  
1400w x 1 @ 2ohm  
850w x 1 @ 4ohm  
Frequency Response: 10-180Hz  
Signal-to-Noise Ratio: 98dB  
Input Sensitivity: 200mV-6V  
Bass Boost Frequency: 30-80Hz variable  
Dimension: 8.85" w x 2.02" h x 15.0" l

### VA1-1600D

1-ohm Stable Class AB Car Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
Low Level/RCA Input w/ Bridged Operation Outputs  
Variable 0-12dB Bass Boost  
Variable 12dB Low Pass Crossover  
4g Power Wire & 4g Speaker Wire Outputs  
Dash Mount Remote Control Included  
200w x 1 @ 4ohm  
360w x 1 @ 2ohm  
Frequency Response: 15-500Hz  
Signal-to-Noise Ratio: 105dB  
Input Sensitivity: 200mV-8V  
Variable 40-250Hz 12dB Low Pass Crossover  
Variable 0-12dB Bass Boost  
Dimension: 8.85" w x 2.02" h x 9" l

### VA1-4000D

1-ohm Stable Class D Monoblock Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
Low Level/RCA Input w/ Bridged Operation Outputs  
Variable 0-12dB Bass Boost  
Variable 12dB Low Pass Crossover  
4g Power Wire & 4g Speaker Wire Outputs  
Dash Mount Remote Control Included  
350w x 1 @ 4ohm  
600w x 1 @ 2ohm  
1000w x 1 @ 1ohm  
Frequency Response: 15-500Hz  
Signal-to-Noise Ratio: 105dB  
Input Sensitivity: 200mV-8V  
Variable 40-250Hz 12dB Low Pass Crossover  
Variable 0-12dB Bass Boost  
Dimension: 8.85" w x 2.02" h x 11.73" l

### VA1-6000D

1-ohm Stable Class D Monoblock Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
Low Level/RCA Input w/ Bridged Operation Outputs  
Variable 0-12dB Bass Boost  
Variable 12dB Low Pass Crossover  
4g Power Wire & 4g Speaker Wire Outputs  
Dash Mount Remote Control Included  
1800w x 1 @ 1ohm  
1000w x 1 @ 2ohm  
600w x 1 @ 4ohm  
Frequency Response: 15-500Hz  
Signal-to-Noise Ratio: 105dB  
Input Sensitivity: 200mV-8V  
Variable 40-250Hz 12dB Low Pass Crossover  
Variable 0-12dB Bass Boost  
Dimension: 8.85" w x 2.02" h x 13.38" l

### VA1-10000D

1-ohm Stable Class D Monoblock Amplifier  
Military Grade PCB w/ PWM MOSFET Power Supply  
Direct Short, Thermal, & Overload Circuit Protection  
Low Level/RCA Input w/ Bridged Operation Outputs  
Variable 0-12dB Bass Boost  
4g Power Wire & 4g Speaker Wire Outputs  
Dash Mount Remote Control Included  
3500w x 1 @ 1ohm  
2000w x 1 @ 2ohm  
1200w x 1 @ 4ohm  
Frequency Response: 10-250Hz  
Signal-to-Noise Ratio: 98dB  
Input Sensitivity: 200mV-6V  
Variable 40-250Hz 12dB Low Pass Crossover  
Variable 0-12dB Bass Boost  
Dimension: 8.85" w x 2.02" h x 18.25" l

# POWER ACOUSTIK

# Vertigo

## INSTRUCTION MANUAL

VA2-1400D

VA4-1800D

VA4-2200D

VA1-1600D

VA1-4000D

VA1-6000D

VA1-8000D

VA1-10000D

PLEASE READ THIS MANUAL BEFORE INSTALAGE AND USING AMPLIFIER

## TROUBLE SHOOTING GUIDE

This section provides you with a catalog of amplifier symptoms and their probable causes and solutions. Before you consult this listing, make sure the vehicle's electrical system is working properly by verifying that other electrical items (e.g. headlights, windows, etc.) still function correctly.

SYMPTOM	PROBABLE CAUSE	SOLUTION
No Audio	Low or N.C Remote Turn-on connections	Check remote turn-on voltage at amp and heat unit
	Blown Fuse Power wires not connected	Replace with new fast-blow fuse Check butt splices or solder joints Check ground and battery connections
	Blown or non speaker connected	Use VOM or DVM to measure speaker coil impedance; check speaker wiring connections
Distorted Audio	Input sensitivity not set properly or damaged speaker cones	See adjustment procedure and check each step; Inspect each speaker for damage and repair or replace suspected component Refer to head unit owner's manual
	Low turn-on voltage	
Audio Level Low	Mute circuit on head unit is on.	Check electrical system for low voltage; Check ground connection
Audio Lacks	Speakers wired with wrong polarity, causing cancellation of bass frequencies	Check polarity of wires from amplifiers to each speaker as defined by the system design Check battery voltage at amplifier during operation
External Fuse Blowing	Incorrect wiring or short circuit	Refer to electrical installation and check each installation step
Whining noise on audio with engine running	Amplifier is picking up alternator noise	Install an in-line noise filter on the head unit's power wire; Check alternator routing diodes or voltage regulator for proper operation, Check all grounds, battery voltage, and RCA cables.
Ticking noise on audio with engine running	Amplifier is picking up radiated spark noise	Check RCA audio cable; Install an in-line noise filter on the head unit's power wire. Check spark plug wires.

## Congratulations on your Purchase

Your new high fidelity **POWER ACUSTIK** amplifier is designed to deliver maximum enjoyment and years of trouble free service. The quality of the installation may effect the performance and the reliability of your products

### Features

- Class "D" High Efficiency Car Amplifier.
- Bridgeable & TRI-Mode Operation.
- Continuously Variable 12dB/Octave High Pass & 12dB/Octave Low Pass Crossover.
- Subwoofer Variable Crossover for Deep Bass Control
- Enhanced Bass Boost +12dB @50Hz
- Silver Plated RCA , Power & Speaker Terminal
- Soft Start & Muting
- Overload, Thermal and Short Circuit Protection
- Power & Protection indicator.
- Bass Level Remote Control(16.4Fit)

### Precautions: Read First!

- The amplifier needs to be installed by an authorised installer
- Negative battery terminal must be disconnected before any electrical connections are made. Be sure choose a location that provides substantial ventilation for the amplifier. The most preferred locations would be in you car's trunk, under the front seats or on the back wall of a truck.
- The location chose should provide at least 2" of clearance above the amplifier for adequate ventilation
- If the amplifier is to be mounted vertically be sure that it is in a place where adequate air will flow along the length of its heatsink fins for cooling.
- NEVER mount the amplifier up side down , this will cause the heat to rise back into the amplifier causing thermal shutdown or possible permanent damage
- NEVER mount the amplifier in a location that is subject to direct sunlight or exposed to moisture
- Be sure to mount the amplifier to a strong, sold surface which will not give way under the stress of a sudden stop or accident.
- Make sure that the mounting screws will not penetrate the gas tank. Brake and fuel lines, wiring or other critical parts of your car when installed.
- Ensure that quality cabling be used to enhance the quality and performance of your amplifier
- Warranty maybe void if proper installation technique and cabling is not used.

- NEVER operate the amplifier without the proper power and ground wire, 8 gauge minimum for the 4 channel and 4g for the MONO (CLASS D) amplifier .
- NEVER operate the amplifier without proper fusing. Fuse holder must be located with in 0.5 meters from the battery. This fuser is to protect the car not to electronics. In case of a short, the fuse will blow instead of the wire burning up. Using other than the recommended fuse ratings at the battery and at the amplifier may cause damage to the amplifier and will void your warranty.
- Do not run wiring underneath or outside the car since exposure to the elements may cause the insulation to deteriorate rapidly, resulting in short-circuits and/or intermittent operation. All cables should be run beneath carpets and inside trim pieces.
- To help minimize interference, it is best to run the power cables along the opposite side from the audio cables
- Whenever wires pass through metal, rubber or plastic grommets must be used to prevent the metal from wearing through the installation and causing a short.
- Whenever possible, use cable ties, mounting clamps and similar wiring aids. (Available from an electrical supply or auto parts store) Adding stress relief loops to wiring is also advisable to prevent straining or breakage.
- It is best to test the system before the amplifier is mounted and interior of car is reassembled
- If the temperature inside your car reaches extreme levels (such as sitting locked up for several hours in the hot sun or exposed to a very cold winter's day) the amplifier may go into protection mode and shut off .Leave the unit off until the ambient temperature returns to normal.
- The amplifier operates with any vehicle using a 12 volt negative ground system.
- NEVER ground the speaker leads and NEVER allow the speaker leads to come in contact with each other. Speaker wire should be 18 gauge or larger.
- Do not listen to high volumes for extended periods of time or hearing damage may occur.

**CAUTIONS EXPOSURE TO SOUND PRESSURE LEVELS OVER 100 dB MAY CAUSE PERMANENT HEARING LOSS, HIGH POWERED AUTOSOUND SYSTEM MAY PRODUCE SOUND PRESSURE LEVELS WELL OVER 130dB. USE COMMON SENSE AND PRACTICE SAFE SOUND.**

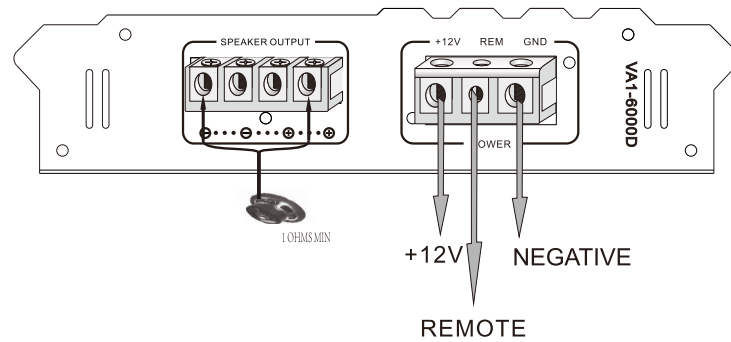
## ADJUSTMENTS

1. Set to the "H.P.F" position when the amplifier is used to drive a tweeter/midrange system. The frequencies below the crossover point will be attenuated at 12dB/octave. Permits adjustment of the crossover frequency, by rotating the knob to select any frequency between 120Hz to 3KHz as the crossover point.
2. Set to the "L.P.F" position when the amplifier is used to drive a subwoofer. The frequencies above the crossover point will be attenuated at 12dB/octave. Permits adjustment of the crossover frequency, by rotating the knob to select any frequency between 50Hz to 250Hz as the crossover point.
3. Set to the "OFF" position when the amplifier will be used for driving full-range speakers. The full frequency band width (20Hz~20KHz) will be output to the speakers without high or low frequency attenuation.
4. Level adjustment The sensitivity adjustment is to allow the amplifier to work with many different brands of head units. It allows input signal to vary between 350 millivolts to 5 volt from the head unit or other signal processor. Start by setting the sensitivity adjustment to the "MIN"(3 volts). Using a cassette or compact disc that you are familiar with , turn on head unit to the 3/4 volume setting. Slowly turn up sensitivity adjustment towards the "MAX"(200 millivolts) using a flat head screw driver . Stop turning on the onset of distortion and turn back just a slight. The 3/4 volume setting is now the "maximum" volume for the head unit. The goal is to keep the level control to the lowest setting yet still have enough signal to drive the amplifier. This is done to prevent over driving the amplifier and to keep system noise to minimum. It is important not to over drive speakers (at point of distortion) this will cause permanent damage to speaker. Also, if the amplifier itself is over driven, it could be damaged.
5. The "BASS" function can be selected to increase low frequency response output, or decrease frequency response output. The "BASS" function will be working at only "OFF" or "L.P.F" position.
  - The BASS is adjustable from 0~12 dB boost at 50Hz.

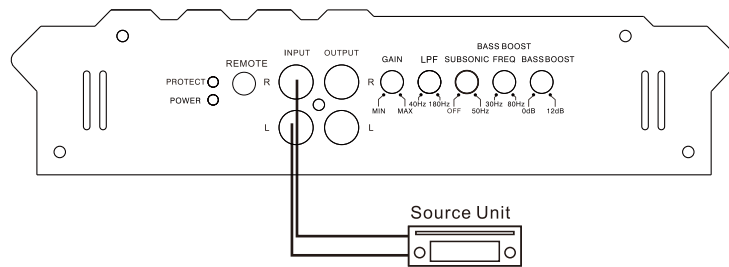
Install the fuse holder that is less than 0.5 meters from the battery. Remember, the fuse is to protect the safety of the car in case of a short. Connect fuse holder to battery, but do not install fuse at this time.

## MONO CHANNEL SPEAKER WIRING DIAGRAM

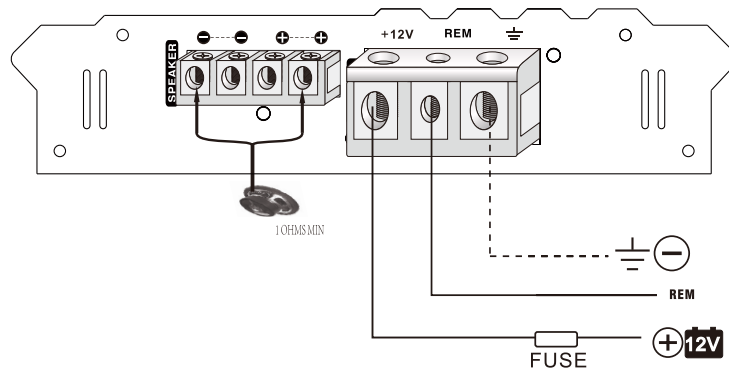
### VA1-6000D REAR



### VA1-8000D / VA1-10000D FRONT



### VA1-8000D / VA1-10000D REAR



## INSTALLATION & CONNECTIONS

### MOUNTING:

1. After reading precaution, decide where you are going to install the unit. Also, see Fig.1.
2. Once the location has been determined, place the amplifier into position. Using a felt tip pen or pencil mark the four holes to be drilled for mounting, NEVER use the amplifier as a template for drilling. It is very easy to damage the amplifier surface in this manner.
3. Remove amplifier. Drill four 3.5 m/m holes into mounting surface. If you want to mount the amplifier to MDF or wood panel, drill four 3.0 m/m diameter holes into mounting surface.
4. If possible, test the system to ensure it is operating correctly before final mounting of the amplifier.
5. Mount the amplifier using the supplied 4 self tapping screws.

### INPUT CONNECTIONS

This amplifier will accept low level inputs only. Low level is the same as line level. The low level signal is carried through RCA cables. It is preferred to use low level inputs to the amplifier if the head unit is equipped with the low level outputs. If not, you can use a "high to low converter" available through your local car audio shop.

Connect the low level/line level RCA cable from the head unit, or signal processor, to the line level input on the amplifier. See Fig.2 system wiring diagrams.

### POWER CONNECTIONS

It is important to have good quality power and ground connections, Remember, to complete an electrical circuit, the ground connection is just as important as the positive power connection. Before any power connections are made, disconnect the ground cable at the battery.

When the power supply lead, memory backup lead or ground lead are extended use a 5mm<sup>2</sup> (AWG5) or larger automotive grade cable which will withstand friction and heat to safe grade against fires occurring as a result of short-circuiting.

**GND**=Connect the proper gauge ground wire to the amplifier "GND" terminal. Locate the position on the chassis of the car to which the amplifier is to be grounded. The surface must be free from any paint or dirt. This can be accomplished with a small grinding bit, sand paper or wire wheel. NOTE: Do not ground the amplifier to the "frame of the car. The frame on most cars and trucks is not grounded to the chassis (body). Use Solder or a clamp ring to connect the ground wire. Pre-drill the prepped chassis to bolt the ground ring terminal with nut, bolt and lock washers. Insulate metal and connector with paint or silicon to prevent rust and oxidation. Silicon also works great to prevent nuts and bolts from working loose in a harsh environment of an automobile. Upon completion of the ground connection, grab wire or connector and confirm that it is a solid connection. To prevent engine noise, it is recommended to ground the head unit and other audio electronics in the same location.

**REM**= Connect the remote wire (power antenna output) from the head unit to the remote turn-on wire of the amplifier. If the head unit is not equipped with a remote/antenna output, locate a wire that is controlled by the accessory position of the key. It is important to have the amplifier turn off the radio or key. If the amplifier remains on, the result will most likely be a dead battery.

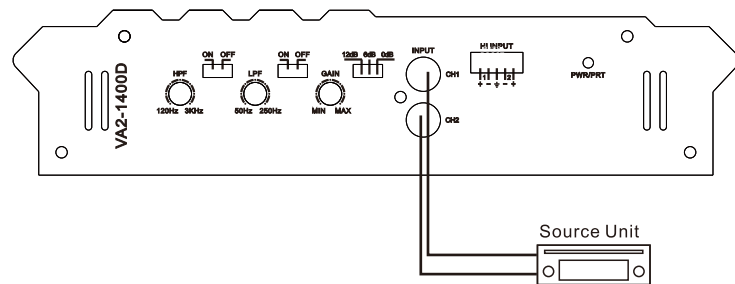
**12V**=Connect the proper gauge power wire to the amplifier "B+" terminal. Run wire to

## 2 CHANNEL AMPLIFIER BRIDGED WIRING

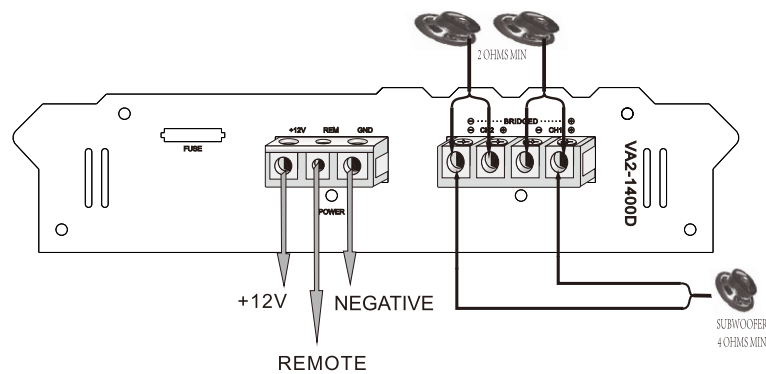
Tri-Mode Operational Output is a unique feature which allows a Crossover(Subwoofer)to be operated in MONO mode,while the mainspeakers are playing in STEREO.

To engage the amplifier in this mode,place the CH1/2 and CH3/4 mode switches in the "FACT/HIGH PASS" position,and set the CH1/2 and CH3/4 hignpass cross over to "FLAT,"Use a high pass passive cross over network for eachof the mid/high speakers for Channels1-4,and a 15.9mH low pass wire colfilter inductor to block high frequencies from eachof the subwoofers as shown in the figure below.

### VA2-1400D FRONT

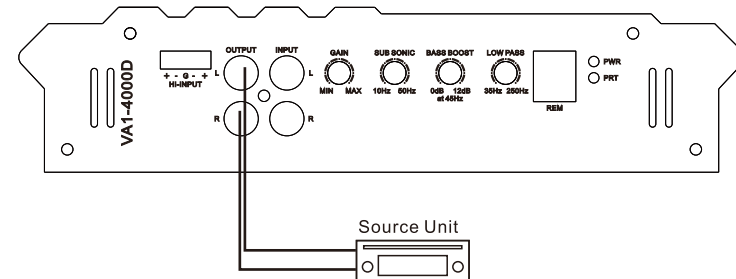


### VA2-1400D REAR

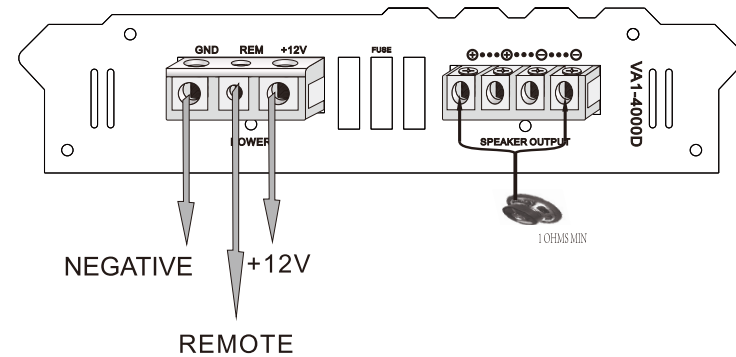


## 1 CHANNEL AMPLIFIER BRIDGED WIRING

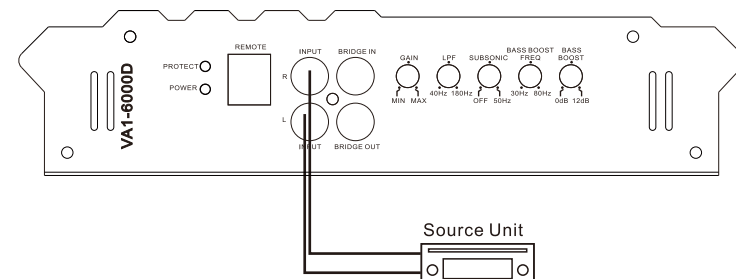
### VA1-4000D FRONT



### VA1-4000D REAR

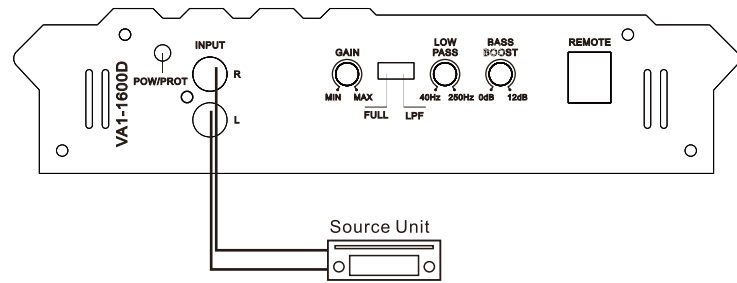


### VA1-6000D FRONT

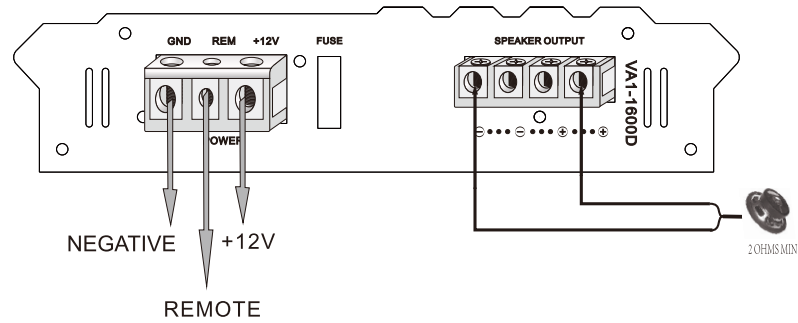


## 1 CHANNEL AMPLIFIER BRIDGED WIRING

### VA1-1600D FRONT

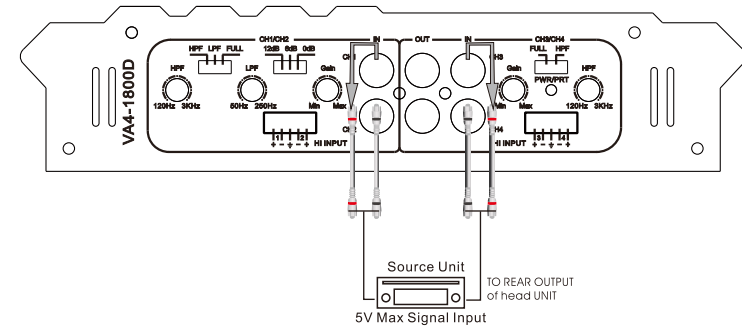


### VA1-1600D REAR



## 4 CHANNEL AMPLIFIER BRIDGED WIRING

### VA4-1800D / VA4-2200D FRONT



### VA4-1800D / VA4-2200D REAR

