

# RetroSound<sup>®</sup>

## Quad 4 4-Channel Amplifier Owner's Manual



The information enclosed in this manual is to be used as a guide to assist in the proper use of this product. This manual does not cover every possibility or use scenario.

Retro Manufacturing, LLC, or its subsidiaries, assume no responsibility for any issues regarding the product's use or misuse. Please read this manual thoroughly before use.

*RETROSOUND.COM*

## Table of Contents

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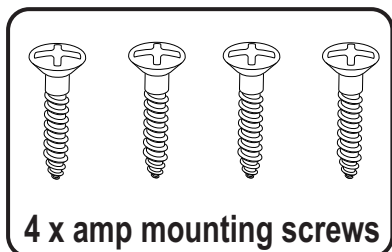
What's in the Box.....	2.
Welcome.....	3.
Warnings and Precautions.....	4.
Power and Ground Connections.....	6.
Mounting the Amplifier.....	8.
Fuse Requirements.....	9.
Control Panel Layout.....	10.
Wiring Diagram for Direct Connection.....	11.
Wiring Diagram using RCA Connections.....	12.
Wiring Diagram for NON RetroSound Radios.....	13.
Level and HPF/FULL Control Adjustments.....	14.
Troubleshooting.....	16.
Warranty.....	17.

## What's in The Box

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**Quad 4 Amplifier**





## Warnings and Precautions

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Installation of RetroSound® Quadraphonic amplifiers, requires detailed knowledge of electronics wiring and proper speaker impedance. We strongly recommend installation by an authorized RetroSound® dealer. This owners manual only provides general installation and operation instructions. If you have any reservations about your installation skills, please contact your local audio dealer for assistance or contact our support department: support@retrosound.com

**IMPORTANT** : This amplifier is designed for operation in vehicles with 12-volt Negative ground electrical systems only.

### PREPARING FOR INSTALLATION

NOTE: The tools listed below may be required for basic installation

- An electric drill with bits
- Philips head and standard screwdrivers
- Wire strippers
- Crimping tool
- VOM (electronic volt ohm meter)
- Heat shrink tubing and heat gun
- Soldering iron
- Electronic (Rosen, NOT Acid Core) solder

**WARNING:** Check your vehicle's owner's manual before disconnecting the battery. Disconnecting the battery on some vehicles may require an anti-theft code when reconnecting the battery and require the on-board computer to be reset at the dealership. Check with your local dealer if you are uncertain.

**Warnings and Precautions (continued)**

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**INSTALLATION PRECAUTIONS**

**NOTE:** We recommend that you proceed only if you are a qualified installer, otherwise; see your Authorized RetroSound<sup>®</sup> dealer to professionally install this amplifier. Always wear protective eyewear when using tools.

- Turn off all stereo and other electrical devices before you begin.
- Disconnect the negative (-) lead from your vehicles battery.
- Locate all fuel lines, brake lines, oil lines, and electrical cables when planning the install.
- Make sure there is at least 2-inches (5 cm) around the air vents on the amplifier.
- When connecting ground points, make sure all paint is carefully scraped away from the auto body and contact is made with bare metal.
- Use a utility knife to trim away fabric from hole locations before drilling or cutting.
- When running power cables through sheet metal, be sure to use grommets to properly insulate the metal edges from the wire insulation.
- If possible, use tubing through grommets.

**WARNING:** Check your vehicle's owner's manual before disconnecting the battery. Disconnecting the battery on some newer vehicles may require an anti-theft code when reconnecting the battery and require the on-board computer to be reset at the dealership. Check with your local dealer if you are uncertain.

## Power and Ground connections

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### POWER WIRING

These amplifiers are designed to work within a 12 to 16 volt DC range. Before any wires are connected, the vehicles electrical system should be checked for correct voltage supply with the help of a voltmeter. First, check the voltage at the battery with the ignition in the OFF position. The voltmeter should read no less than 12V. If your vehicle's electrical system is not up to these specifications, we recommend having it checked by an auto electrician before any further installation. Once the vehicle is checked, make certain the correct cable gauge is used. Since this amplifier is a very efficient Class D design, 8-10 gauge is suitable for most power runs with this amplifier.

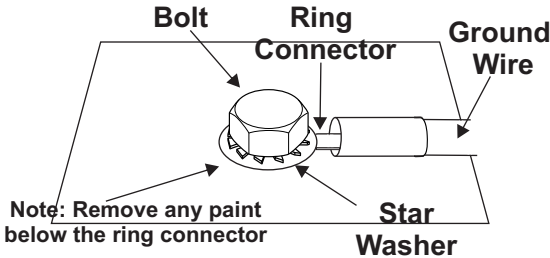
### BATT+ (Power)

This amplifier should be wired directly to the vehicle battery using the appropriate size cable. Start at the vehicle battery and run the power cable through to the amplifier. Avoid running the power cable over engine components and near heater cores. The use of an inline fuse or circuit breaker is a must; this will prevent the risk of a potential fire caused by a short in your power cable. Connect the fuse holder or circuit breaker as close to the battery positive (+) terminal as possible (within 18" from the battery). This fuse or circuit breaker should be no greater then the sum of the fuses found on the chassis of your amplifier You may now connect the cable to the battery, but remember to leave the fuse out or circuit breaker "off" until all other cable connections are made.

**Power and Ground connections (continued)**

**GND (Ground)** 

When grounding your amplifier, locate a metal area close to the amplifier that is good source of ground (preferable the floor pan). Use a short length of cable the same gauge as your power cable. Once again, investigate the area you wish to use for electrical wires, vacuum lines, and brake or fuel lines. Use either a wire brush or sandpaper to eliminate unwanted paint for better contact of the ground. See below for a close up drawing of a correctly configured ground connection.



Secure the ground cable to the body using a bolt, star washer and nut. Spread silicon over the screw and bare metal to prevent rust and possible water leaks.

**NOTE:** The Ground must be capable of carrying the same amount of current as the positive wire. Now it's time to connect the power and ground cables to the amplifier. Cut both cables to length. Check all speaker connections for shorted leads or common ground. Then connect the ground (black wire) first, then the 12 volt (yellow) wire.



## Mounting the Amplifier



To keep your RetroSound® amplifier running at top performance, choosing the proper location is of utmost importance. Both Thermal and Overload protection are built in. In the event of overheating, the amplifier will reduce its power output (volume) to maintain operation. For this reason the amplifier should be mounted in a location which will allow air to circulate freely. The compact size of the RetroSound® Quadraphonic amplifier allows greater flexibility in mounting.

### MOUNTING LOCATION

Find a dry, clear and well ventilated area to mount your amplifier that is unobstructed by any objects that will cause harm or block ventilation. The amplifier should be protected from exposure to moisture and direct sunlight. You may use the amplifier as a template and mark the four screw locations with a felt tip pen. Set the amplifier aside before drilling. Use caution to make sure there are no objects behind the installation surface that may become damaged during drilling. If mounting under a seat, make sure there is at least 1-inch (2.5 cm) of space above the amplifier's heatsink to permit proper cooling.

The best places to mount your amplifier are: The floor of the trunk, under a seat, dashboard, or on the back of the rear seat. When installing this unit behind the dash, be sure to keep the unit away from the radio to prevent any electrical interference between both of the units.

For alternate installation locations, please consult your authorized RetroSound® dealer or email [support@retrosound.com](mailto:support@retrosound.com).

## Fuse Requirements

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While your RetroSound® amplifier incorporates a fuse with its constant power connection lead, these do nothing to protect the vehicle from a dangerous short circuit. It is absolutely vital that the main power lead to the amplifier(s) in the system be fused within 18-inches (45cm) of the connection to the vehicle battery. The value of this fuse (or circuit breaker) should be no greater than the sum of the fuses found on all of the equipment being connected to that power wire.

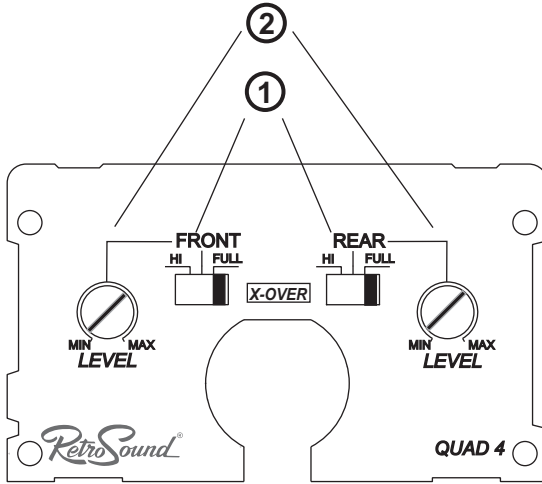
**\*\*\* WARNING \*\*\***

- Do not install in a place where it could injure the driver or passengers if the vehicle stops suddenly.
- Upside down mounting will compromise heat dissipation through the heatsink and could engage the protection circuitry.
- Don't mount the amplifier so that the wire connections are unprotected or are subject to pinching or damage from nearby objects.
- The DC power wire must be fused at the battery positive (+) terminal connection.

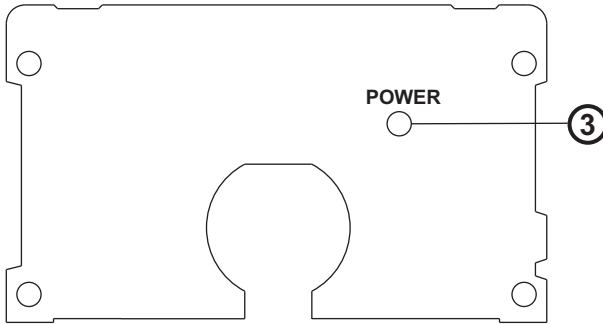
Before making or breaking power connections at the amplifier power terminals, disconnect the DC power wire at the battery end.

- The battery of the car must be disconnected until the entire wiring and installation is completed.

# Control Panel Layout



**INPUT SIDE (Fig. 1)**



**OUTPUT SIDE (Fig 2)**

### 1. Front & Rear HI/FULL crossover

These switches activate the built-in electronic crossover network. When set to FULL, this allows full spectrum (Bass/Mid/Treble) reproduction. Moving the switch to HI, sets the onboard crossover to 110 Hz, which cuts off low frequencies, and allows the channels with this switch activated to pass only frequencies above 110Hz. Note: Default setting is set to FULL.

### 2. Front & Rear LEVEL control

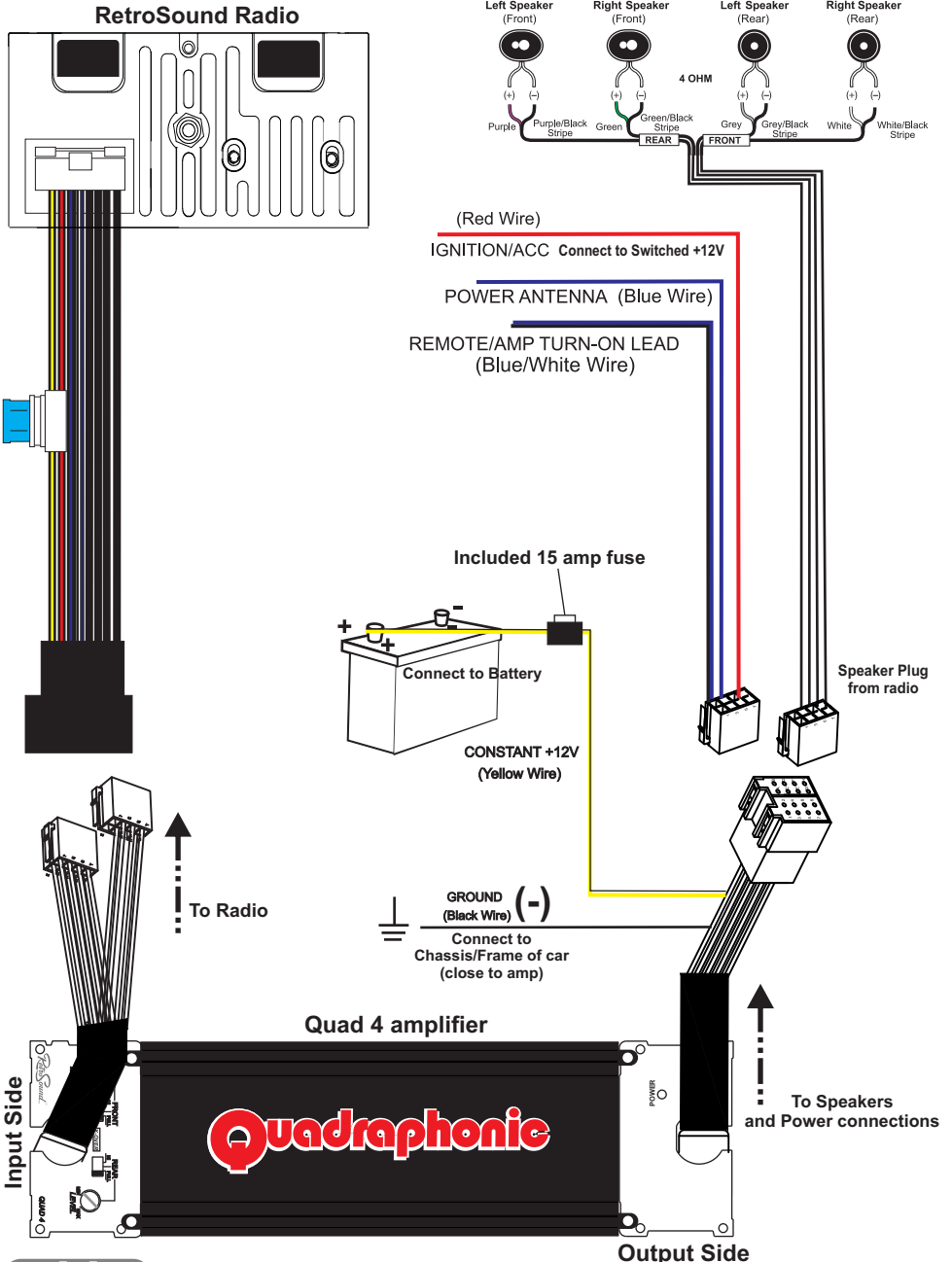
This control is used to match the input sensitivity of the amplifier to the source unit that you are using.

### 3. Power

When power is on, LED indicator will light blue.

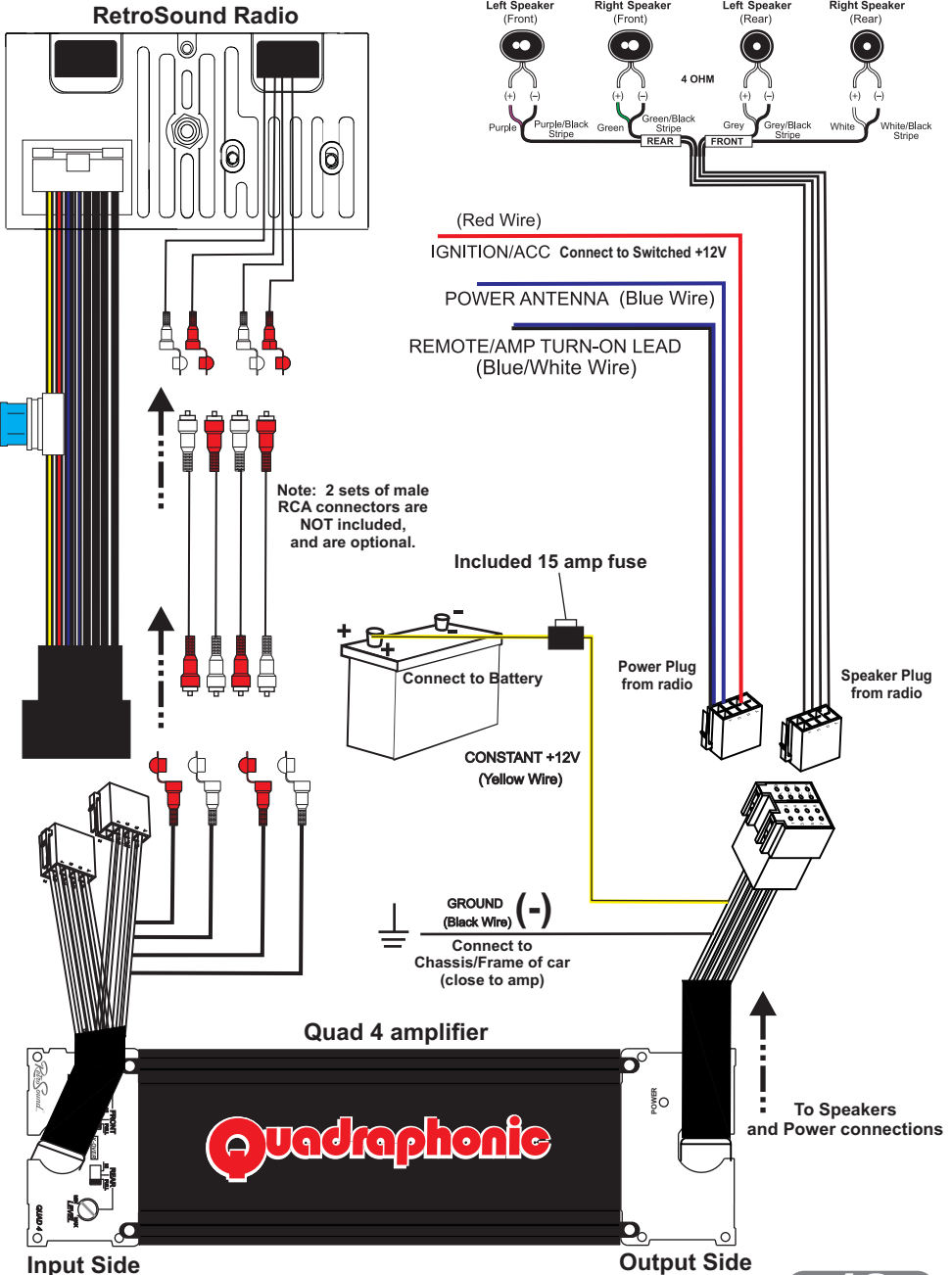
# Wiring Diagram for Direct Connection

This diagram shows you how the Quad 4 amplifier is connected directly to your RetroSound radio, using the standard plugs included. Please note that you will need to connect the constant +12V (Yellow) lead to the battery, and the ground lead (black) to the chassis or frame of the car.



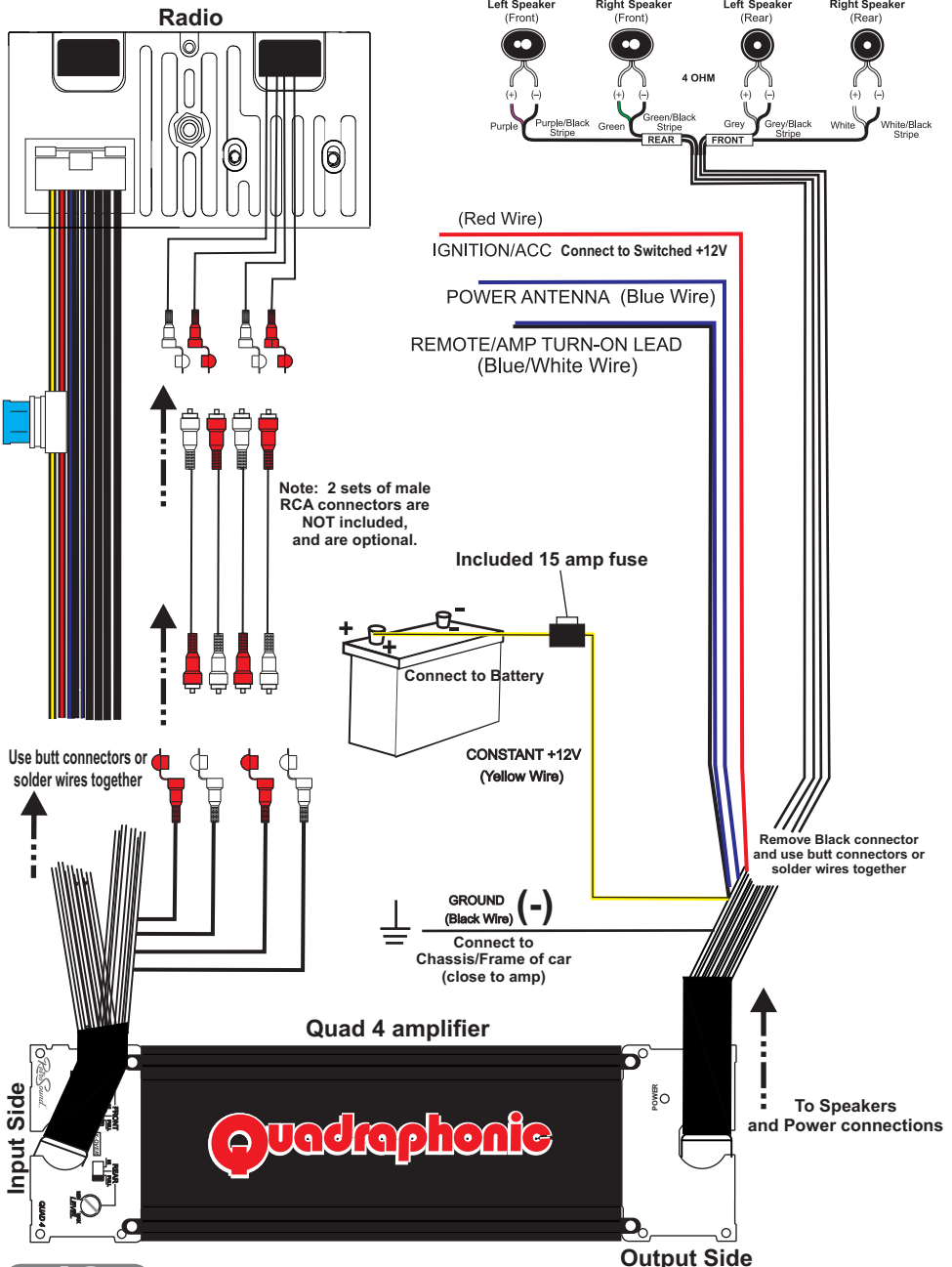
# Wiring Diagram using RCA connections

This diagram shows you how the Quad 4 amplifier is connected directly to your RetroSound radio, using the standard plugs included, while using the RCA (low level pre-amp outputs). Please note that you will need to connect the constant +12V (Yellow) lead to the battery, and the ground lead (black) to the chassis or frame of the car.

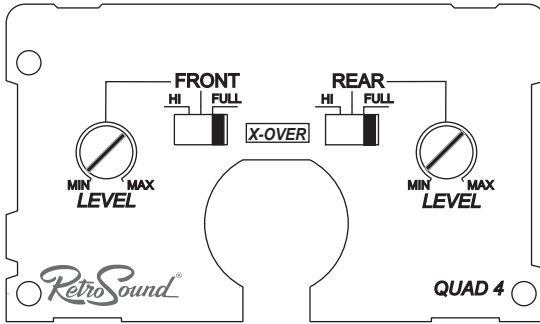


# Wiring Diagram for NON RetroSound radios

This diagram shows you how the Quad 4 amplifier is connected directly to your NON RetroSound radio, using the standard plugs included. We recommend using the RCA (low level pre-amp outputs). We recommend professional installation for this installation. Please contact us at: support@retrosound.com for any tech questions you may have.



## Level and HPF/ FULL Control Adjustments



### INPUT SIDE PANEL

#### INPUT LEVEL (Gain) Adjustment:

This control allows you to match the input level of the amplifier to the output level of your head unit. Matching the input can be accomplished in three simple steps:

1. Set the volume of LEVEL on the amplifier to Min (completely counter clock wise).
2. Turn on the head unit and adjust volume to 2/3 maximum, and set the BASS and TREBLE to zero.
3. Adjust the LEVEL control clockwise until the sound just begins to distort, then back off slightly to cut distortion and operate at optimum gain.

NOTE: The LEVEL control is not a volume control. Ignoring the three steps above may leave you with damaged speaker and/or a damaged amplifier.

#### HI / FULL X-OVER Switch adjustment (Front/Rear):

These switches activate the built-in electronic crossover network. When set to FULL, this allows full spectrum (Bass/Mid/Treble) reproduction. Moving the switch to HI, sets the onboard crossover to 110 Hz, which cuts off low frequencies, and allows the channels with this switch activated to pass only frequencies above 110Hz. Note: Default setting is set to FULL.

## Troubleshooting

Problem	Solution
<b>Power LED not ON</b>	With a Volt Ohm Meter (VOM) check: <ul style="list-style-type: none"> <li>• +12 Volt power terminal (should read +12 to +16VDC).</li> <li>• Remote turn-on terminal (should read +12 to +16VDC).</li> <li>• Ground Terminal.</li> </ul>
<b>Power LED lights BLUE, no output</b>	<ul style="list-style-type: none"> <li>• Advanced Protection Circuitry is engaging due to high internal temperature of the amplifier. Amplifier requires more air flow around the chassis. If this continues choose a better ventilated mounting location.</li> <li>• High operating temperature can be caused by incorrect input sensitivity level. Reset the LEVEL control.</li> </ul>
<b>1. Amp is VERY HOT</b>  <b>2. Amp shuts down ONLY when the vehicle is running</b>  <b>3. Amp plays at very low volume</b>	<ul style="list-style-type: none"> <li>• Thermal protection is engaged. Check for proper impedance at speaker terminals. Also check for adequate air flow around the amplifier.</li> <li>• Voltage protection engaged. Voltage to the amp is not within the 10-16 VDC operating range. Have the battery/charging system inspected.</li> <li>• Short circuit protection is engaged. Check for speaker wires shorted to each other or the vehicle chassis. Speakers operating below the minimum impedance can cause this to occur.</li> </ul>
<b>Alternator noise (varies with RPM)</b>	<ul style="list-style-type: none"> <li>• Check for damaged RCA cable.</li> <li>• Check routing of RCA cable.</li> <li>• Check Source Unit for good ground.</li> <li>• Check amp gain setting, turn down if set too high.</li> </ul>
<b>Poor Bass Response</b>	<ul style="list-style-type: none"> <li>• Check speaker polarity, reverse the connection of one speaker only.</li> </ul>



## Specifications for Quad 4 amplifier

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Quad 4	Specs
4 Ohms Power (Watts)	45 x 4
Peak Music Power (Watts)	55 x 4
THD @ RMS Power	<0.2%
Frequency Response	10Hz-40kHz
S/N Ratio (EIA Rated)	>90dB
Input Sensitivity	250mV-6.0 volts
Crossover Slope	12 dB
High-Pass Crossover Freq. (Hz)	110 Hz
Fuses/ ATC Style	15A x 1 (included on yellow wire)
Dimension (W x D x H inches)	7.16" W x 2.9" D x 1.78" H

## Warranty

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If your product does not work properly because of defects in materials and workmanship RetroSound, a division of Retro Manufacturing, LLC (collectively referred to as "the warrantor") will, for the length of the period indicated in the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or refurbished product. The decision to repair or replace will be made by the warrantor.

***Quadraphonic series amplifiers are covered for: (1) Year Parts and (1) Year Labor.***

During the "Labor" warranty period, there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry in or mail in your product prepaid during the warranty period. This warranty only applies to products purchased and serviced in the United States, Alaska, Hawaii or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

To handle a warranty issue, contact us at [support@retrosoundusa.com](mailto:support@retrosoundusa.com) or 702-483-2222 and get a Return Authorization number. All returns and warranty issues must receive a Return Authorization (RA) number. Any product received without a RA number will be refused.

Retro Manufacturing, LLC Phone: 702-483-2222 Fax: 702-483-2229

### LIMITED WARRANTY-LIMITS AND EXCLUSIONS

This warranty ONLY COVERS failures due to defects in materials and workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred during shipment, failures which are caused by products not supplied by the warrantor, failures which result from accident, misuse, abuse, neglect, bug infestation, mishandling, misapplication, alteration, faulty installation, set-up adjustment, maladjustment of consumer control, improper maintenance, improper antenna, inadequate signal reception or pickup, power line surge, improper voltage supply, lightning, modification, commercial use (such as use in hotels, offices, restaurants, or other business uses) or rental use of the product, or service by anyone other than the technician from the factory service center or other authorized service centers, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the sevicer, and loss of media, data or other memory contents. The items listed are not exclusive, but are for illustration only.) ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal bottoms and you may also have other bottoms which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or service center.

# RetroSound<sup>®</sup>

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