



MODEL 4302[©]
DISCRETE FOUR CHANNEL AMPLIFIER
(1985-MSRP \$425)

OWNER'S MANUAL
AND
INSTALLATION GUIDE
INTRODUCTION

The **LINEAR POWER™ Model 4302[©]** four channel amplifier will prove to be a high quality addition to your car audio system regardless of which configuration best suits your needs. It can be used as a full range discrete amplifier to compliment the popular source units providing separate front and rear stereo outputs, or in conjunction with a **Linear Power™ Electronic Crossover** to build a complete Bi-Amplifier System. The convenience and versatility of the model **4302[©]** will allow it to be used in additional configurations limited only by the creativity of the auto sound installer.

The compact size and inherent ruggedness of the **4302[©]** will insure its popularity for years to come.

TECHNICAL DESCRIPTION

POWER SUPPLY:

Self oscillation for reliability and efficiency. The transformer is epoxy dipped for extreme vibration resistance.

PROTECTION:

Our stable amplifier design is made virtually indestructible by three separate forms of protection. First is an all new Thermal Protection Circuit which is designed to prevent damage from high frequency oscillations or excessive ambient temperature. The second form of protection protects the amplifier from short circuits in the installation, utilizing fast acting fuses in the output circuitry. The third form of protection utilizes a polarity protection diode to guard against component damage from reversed power connections.

CONSTRUCTION FEATURES:

The infinitely variable input sensitivity control permits optimal signal matching for lowest noise and lowest distortion with virtually any source. All components used are rated for at least 150% of their intended use, and are mounted on double-sided fiberglass epoxy circuit boards.

QUALITY CONTROL:

In-house construction of critical components like transformers and chassis pieces, as well as total assembly, allows **LINEAR POWER™** to maintain uniform quality. 100% of the finished units are tested, then burned in for four hours, and tested again. Amplifiers, which pass these rigorous controls, have truly earned the **LINEAR POWER™** Logo.

INSTRUCTIONS

Read the following instructions through completely. If they appear too complicated, we recommend that you have an authorized **Linear Power™ Dealer** perform the installation.

MOUNTING

1. The amplifier will work best if it is kept as cool as possible. Mount in a position that allows air to flow freely through the black fins. Be sure there is ample space above the amplifier to avoid trapping heated air rising from the amplifier. Avoid mounting any amplifier in the dash or on the firewall to avoid noises being radiated directly into the case.
2. Mount your amplifier in a position that allows ample room for gain adjustments, and the installation, removal and attachment of leads.
3. The case of your amplifier is designed to act as a noise shield. To maintain this protection, be sure the metal case of the amp does not touch the metal of the car. Do not remove or damage the rubber grommets which provide electrical insulation and vibration isolation.

WIRING

1. Disconnect the negative ground cable from your vehicle's battery before making any power connections to your amplifier.
2. Connect the negative power wire from the amp to a solid frame member via a bolt or self-tapping screw. This connection must be to a clean, unpainted surface. Always attach the ground wire first when installing this amplifier, and disconnect the ground last when removing this amp from the system.

3. A fuse of the proper size must be installed in line with the main power in order to prevent damage to your wiring. It should be connected to the battery's positive terminal, or close to the battery as possible. Use the fuse holder and fuse provided, and replace only with the same size fuse. The model **4302**© uses an **AGC 15** fuse.

WARNING: USE OF OVERSIZE FUSE WILL DAMAGE YOUR AMPLIFIER

4. The other end of the fuse holder should be connected to the positive power wire from the amplifier. To extend the length of the power lead use 12 gauge wire or larger to reduce power loss.

5. The red and white wire acts as an electrical switch to turn the amplifier on and off. It should be connected to the power antenna lead from the radio. Where no power antenna lead exists, a source of 12 volts connected through a toggle switch will do. Do not connect the red and white wire directly to a source that will leave the amplifier permanently on as this will drain the battery.

6. The RCA (Phono) jacks will accommodate either high or low level signal, ranging from 150 mV to 5 volts. For low level signals, always use shielded cable and avoid routing signal cables in the vicinity of any power wire. The center pin of the RCA plug is always the positive input connection.

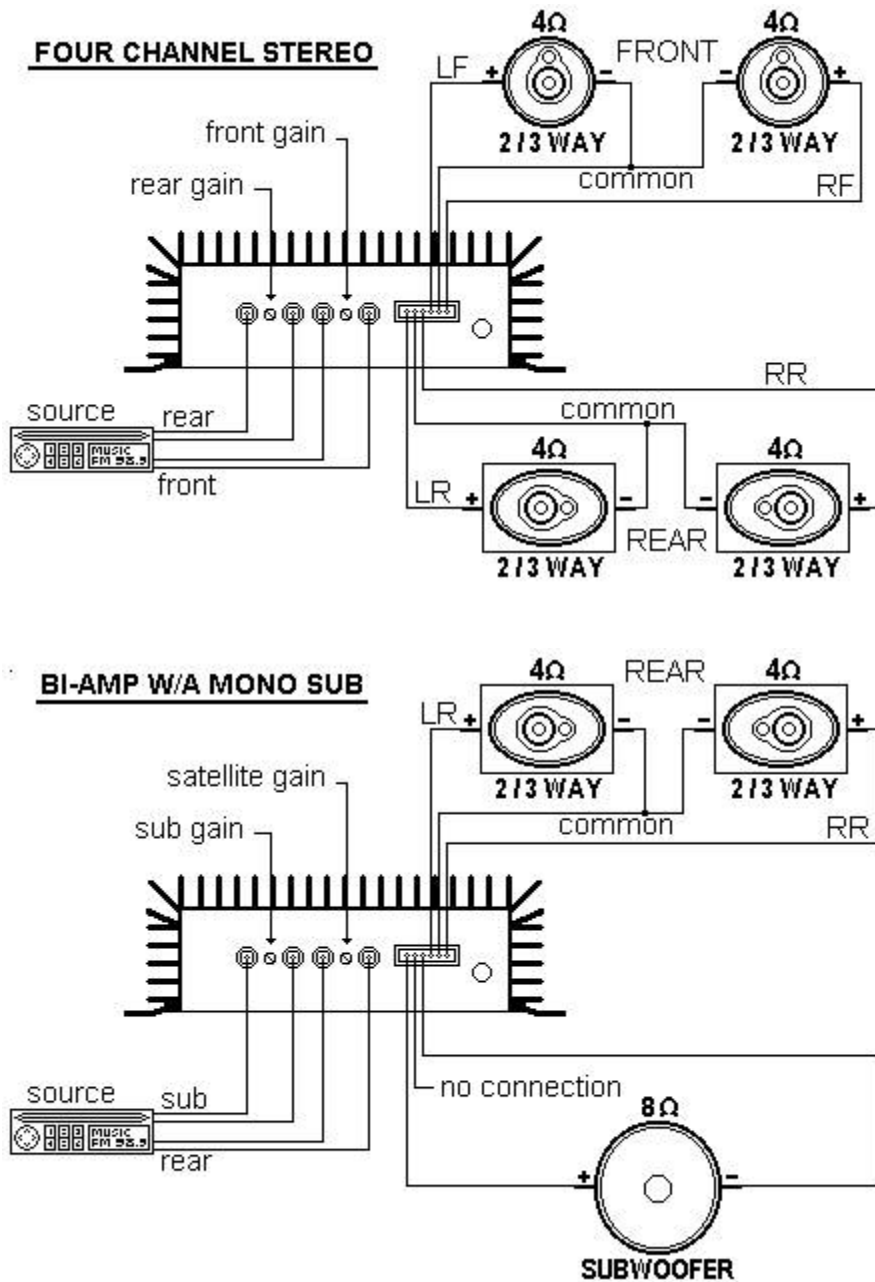
7. To operate the rear channel of the **4302**© in the mono bridged mode an inverted mono input signal is needed. To determine if your crossover provides the necessary signal refer to the owner's manual provided with the unit. All **Linear Power**™ crossovers supply the needed signal.

OPERATION/ADJUSTMENT

The output of most any car audio equipment will follow a common distortion curve. This curve will show that the distortion is at its lowest level right before it reaches full rated output. After that point, the distortion increases rapidly to unusable levels. For any system to operate at minimum distortion with minimum noise and still reach full power output, the equipment should be aligned to operate at the same point on the curve at the same time.

In a basic system, using a single amplifier, set the amp gain to minimum, turn the source up until it just starts to distort, then back the output down slightly. This is the point where the output of the source is cleanest. Now, bring the gain of the amp up until it just starts to distort, and back it down slightly. This will allow the source and amp to reach maximum useable output at the same time.

SUGGESTED WIRING DIAGRAMS



GENERAL TROUBLESHOOTING

SPEAKER FUSES:

The model **4302**© incorporates speaker protection fuses. In the event of a shorted speaker wire or use of too low of speaker impedance, the internal fuse(s) may blow. If you are experiencing an inoperable channel, follow this procedure for checking the speaker fuses;

Remove main power fuse from large red wire. Remove the four screws used to retain the inspection cover and faceplate on your **4302**©. Slide cover open and inspect the fuses located near the output speaker connector. Reverse this procedure after renewing blown fuse(s).

NOTE: Replace the internal speaker fuse(s) using the same type and size of fuse to avoid damage to the amplifier.

NO SOUND

Check all connections. Check main power fuse. Check accessory fuse. With a trouble light or meter, be sure + 12 Volts is present at the amplifier on the large positive cable and on the small red/white turn-on wire. Check for a good ground connection. Check by substitution or other method for proper operation of music source.

BLOWS FUSES

Check all connections to be sure all power wires and speaker wires do not touch ground or each other. Re-check polarity of main power wires.

SHUTS OFF

As this amplifier is equipped with a thermal and a short circuit shut-down system, in the unlikely event of excessive temperatures due to high ambient temperature or improper speaker impedance, the amp will turn itself off. To avoid damage to the speakers, turn the volume to a minimum while waiting for the amp to turn itself back on.

SERVICE OR REPAIR

To obtain modification, service or repair, please contact our **ONLY Authorized LINEAR POWER™ Product Service Center:**

T.I.P.S. INC.

3455 Lanell lane, Pearl, MS 39208

(601) 932-8477

E-mail: ray@tipsinc.net

LINEAR POWER™

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SPECIFICATIONS

4302[©]

Inter-modulation Distortion: >0.1%

Signal to Noise Ratio: <95dB or greater (A-Weight)

Slew Rate: 7 volts per microsecond

Input Signal for Maximum Power: 150 MV at maximum gain setting. 5 volts at minimum gain setting.

Dynamic Headroom: 2dB

RMS Continuous Power: 30 Watts x 4, or 30 x 2 @ 4ohms and 60 x 1 @ 8 ohms

THD(from 20-20KHz): >0.08%

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