



POWER ACOUSTIK

OWNER'S MANUAL

Power series amplifier

PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D



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INTRODUCTION

Amplifiers provide high-performance sound reinforcement for your mobile audio equipment. Its versatility enables compatibility with optional Equalizers, Frequency Dividing Network Crossovers, and other audio processors in a customized system. The Multi-Mode bridging capabilities allow flexibility in hosting several different speaker configurations.

To achieve optimum performance, it is highly recommended that you read this Owners Manual before beginning installation.

FEATURES

- High Speed Digital Circuitry
- Fully Regulated PWM Power Supply
- Four Way Protection Circuit
- 1 Ohm Stable
- Bridging Synchronization
- Variable Low Pass : 50Hz ~ 150Hz
- Variable Subsonic Filter : 15Hz ~ 40Hz
- Variable Bass Boost : 0 ~ +18dB(45Hz)
- Phase Switch : 0° ~ 180°
- System Distress Indicator
- Mono Speaker Output Connector
- Remote Dash mount Low Level Gain Control With Cable
- Nickel Plated Heavy Duty Power & Speaker Terminals

WARNING

High powered audio systems in a vehicle are capable of generating "Live Concert" high levels of sound pressure, continued exposure to excessively high volume sound levels may cause hearing loss or damage. Also, operation of a motor vehicle while listening to audio equipment at high volume levels may impair your ability to hear external sounds such as; horns, warning signals, or emergency vehicles, thus constituting to a potential traffic hazard. In the interest of safety, Consumer Electronics recommends listening at lower volume levels while driving.



PLANNING YOUR SYSTEM

Before beginning the installation, consider the following:

- A. If you plan to expand your system by adding other components sometime in the future, ensure adequate space is left, and cooling requirements are met.
- B. Should you use high or low inputs?
Your Amplifier has been designed to accept either Low-Level (Pre-Amp outputs from your radio) signal source.
If your radio / source is equipped with Pre-Amp outputs, it is possible to utilize them to drive the Amplifier and connecting (Amplifier) to the 2 rear speakers. Then, use the built-in power of your radio to drive the 2 front speakers.

NOTE :

DISTORTION LEVEL IS CONSIDERABLY LOWER FROM PRE-AMP (LOW LEVEL) OUTPUTS.

- C. Are your components matched? The peak power rating of your speakers must be equal or greater than the Amplifiers. They also must be 1-8 Ohms impedance (This information is normally printed on the speaker magnet).
- D. Consider both the length of your leads, and routing when determining the mounting location. Pre-Amp input jacks require a length of high quality shielded male to male RCA patch cord.

MOUNTING YOUR AMPLIFIER

The mounting position of your Amplifier will have a great effect on its ability to dissipate the heat generated during normal operation. It has an ample heat sink for heat dissipation, and also designed with a thermal shut-down (for heat protection)circuit, making air to be directed over the cooling fins will improve heat dissipation dramatically. DO NOT enclose the amplifier in a small box of cover it so that air cannot flow around fins.

Temperatures in car trunks have been measured as high as 175°F (80°C) in the summer time, since the thermal shut-down point for the Amplifier is 185°F (85°C). It is easy to see that it must be mounted for maximum cooling capability. To achieve maximum advantage of convection air flow in an enclosed trunk, mount the amplifier in a vertical position, on a vertical surface.

Cooling requirements are considerably relaxed when mounting inside the passenger compartment since the driver will not often allow temperatures to reach a critical point. Floor mounting under the seat is usually satisfactory as long as there is at least 1 inch (2 cm) above the Amplifier's fins for ventilation.

- a. Select a suitable location that is convenient for mounting, is accessible for wiring and has ample room for air circulation and cooling.
- b. Use the amplifier as a template to mark the mounting holes, remove the Amplifier and drill 4 holes, use extreme caution, inspect underneath surface before drilling.
- c. Secure the Amplifier using the screws provided.



WIRING CONNECTION

A. CONNECTING THE POWER

CAUTION:

AS A PRECAUTION, IT IS ADVISABLE TO DISCONNECT THE VEHICLE'S BATTERY BEFORE MAKING CONNECTION TO THE +12 VOLTS SUPPLY WIRING.

4 GAUGE (Thicker if planning for additional Amplifiers) wire is recommended both the power and ground wires. 12 Gauge, for the remote turn-on wire. Both types are available at most Mobile Audio Dealers or Installation Shops.

(1) GROUND: To Vehicle Chassis

To avoid unwanted ignition noise caused by ground loops, it is essential that the Amplifier be grounded to a clean, bare, metal surface of the vehicles chassis.

NOTE:

GROUND WIRE SHOULD NOT BE EXTENDED MORE THAN 3 FT. (1 METER).

(2) +12 Volt (Fused) Constant Power: To Battery (+)

Due to the power requirements of the Amplifier, this connection should be made directly to the positive (+) terminal of battery. For safety measure, install an in-line Fuse Holder (not included) as close to the battery positive (+) terminal as possible with an amperage rating: don't to exceed total value of fuses in Amp.

(3) Remote Turn-On Input: To Power Antenna output of Car Stereo

This Amplifier is turned "ON" remotely when the vehicle's stereo is turned "ON".

NOTE:

IF YOUR RADIO DOES NOT HAVE +12 VOLT OUTPUT LEAD WHEN THE RADIO IS TURNED ON, THE "REM" TERMINAL ON THE AMPLIFIER CAN BE CONNECTED TO VEHICLE'S ACCESSORY CIRCUIT THAT IS LIVE WHEN THE KEY IS "ON".

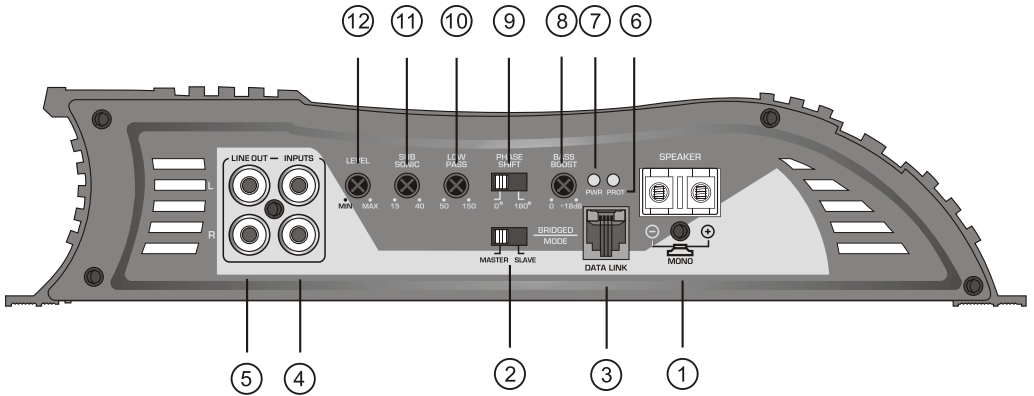
WARNING

Investigate the layout of your automobile thoroughly before drilling or cutting any holes. Take care when you work near the gas tanks, lines, or hydraulic lines, and electrical wiring. Don't mount this system so that the wire connections are unprotected or are subject to pinching or damage from nearby objects. The +12 V DC power wire must be fused at the battery positive terminal connection. Before making or breaking power connections at this system power terminals, disconnect the +12 V wire at the battery end. Confirm your radio / cassette player and / or other equip is turned off while connecting the input jacks and speaker terminals. If you need to replace the power fuse replace it only with a fuse identical to that supplied with the system. Using a fuse of different type or rating may result in damage to this system which isn't covered by the warranty.

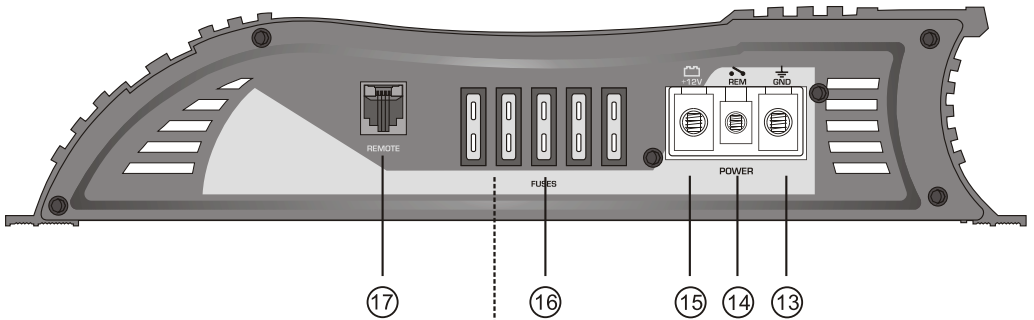


CONTROLS & FUNCTIONS

■ PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D FRONT



■ PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D REAR



- PS1-2000D:30A X 2
- PS1-3000D:30A X 3
- PS1-4000D:30A X 4
- PS1-5500D:30A X 5

1. Speaker Terminals

2. Bridged Switch

See diagram on page 7,8. Note that one amp must be set to "Master" position while the other is set to "Slave" and that both are connected via R 11 cord.

3. Bridging Remote Jacks

4. Level Input RCA Jacks

These inputs are for signal cables from the source, always use high quality RCA type shielded cables.

5. Line Out RCA Jacks

The LINE OUT allows you to build multiple amplifier systems without having to use splitter cords to distribute the signal. Now it is simply a matter of bringing one set of RCAS into the first amplifier, then using the LINE OUT RCA jacks as the feed to the next amplifier.

6. Protection Indicate

The amplifier protection circuitry will disable the amplifier if input overload, short circuit or extremely high temperature conditions are detected.

7. Power Indicate

Turns on when the amplifier is on, indicating that the amplifier is functioning properly.

8. Variable Bass Boost Control (0 ~ +18dB)

By using the BASS BOOST function, bass notes at 45Hz are emphasized as much as 18dB..

9. Phase Shift Control (0 ~ 180 Degrees)

Allows you to change the phase of your subwoofer from 0 to 180 degrees to help compensate for timing differences between mid and

10. Variable Low Pass Filter (50Hz ~ 150Hz)

Adjust variable crossover frequency with control as desired. The amplifier input circuit filters out everything above the frequency selected, so only



11. Subsonic Control

Variable Subsonic Filter :15Hz ~ 40Hz

12. Input Sensitivity Adjustment

This control adjusts the amplifier's input sensitivity. Input sensitivity is variable from 200mV to 8V. Clockwise increases sensitivity. Counterclockwise decreases sensitivity. This knob is not a volume control for the amplifier. The amplifier can be driven to full power with a wide range of signal levels. A lower signal level will require increased sensitivity for full power. A higher signal level will require decreased sensitivity.

13. B-TERMINAL (CHASSIS GROUND)

To avoid unwanted ignition noise caused by ground loops, it is essential that the Amplifier be grounded to a clean, bare, metal surface of the vehicle's chassis.

Note : GROUND WIRE SHOULD NOT BE EXTENDED MORE THAN 3 FT (1 METER).

14. REMOTE TURN-ON INPUT

To remote wire car stereo.

This amplifier is turned "ON" remotely when vehicle's stereo is turned "ON"

Note : IF YOUR RADIO DOES NOT HAVE +12 VOLT OUTPUT LEAD. THE "REMOTE" TERMINAL ON THE AMPLIFIER CAN BE CONNECTED TO VEHICLE'S ACCESSORY CIRCUIT THAT IS LIVE WHEN THE KEY IS "ON".

15. B+TERMINAL (BATTERY POSITIVE)

Due to the power requirements of the Amplifier, this connection should be made directly to the positive(+) terminal of battery. A primary fuse holder (not included) is required on the positive(+) cable within 18 inches of the battery(+) terminal to protect the electrical system of the vehicle. This fuse should not exceed 1 1/2 times that of the total amperage rating of all amplifiers connected to this cable. Additionally, a secondary fuse holder (not included) is required to protect the amplifier itself. It should be on the positive(+) cable within 18 inches of the amplifier and have a fuse rating not to exceed the recommendation on page 4.

16. FUSE

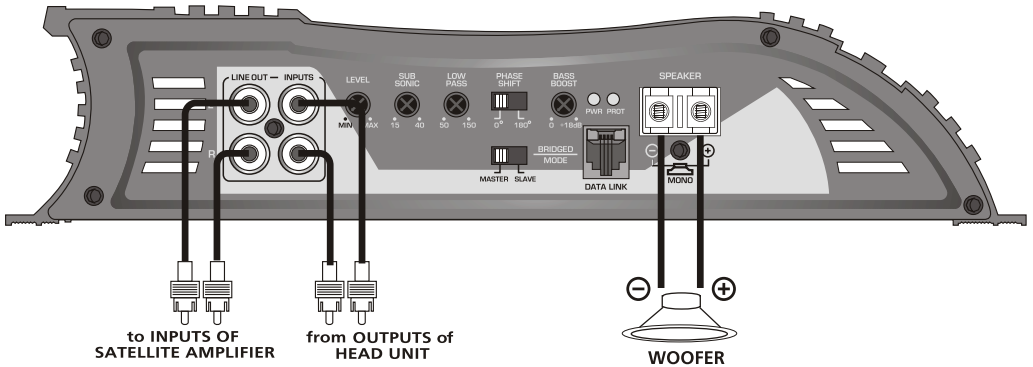
17. Bass Boost REMOTE Control Input



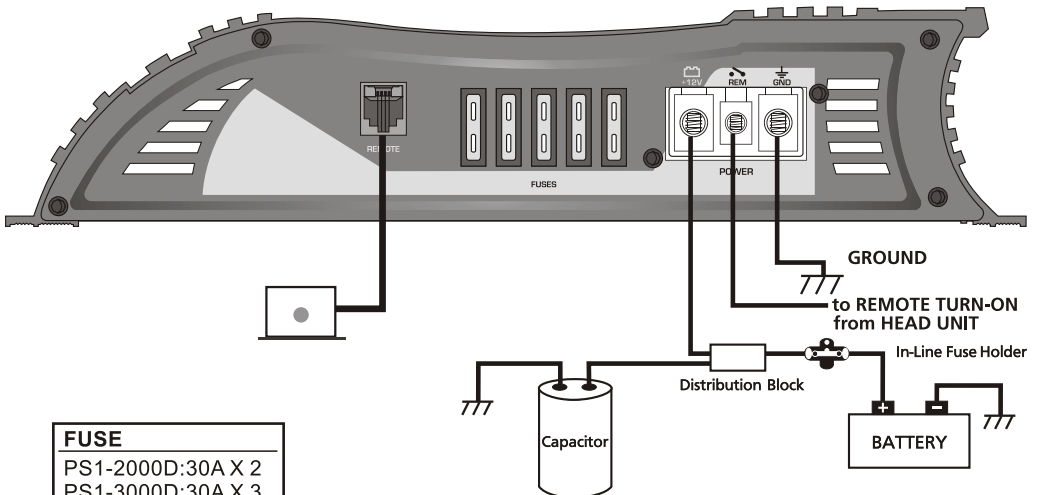
CONTROLS & FUNCTIONS

SINGLE AMPLIFIER SYSTEM

■ PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D FRONT



■ PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D REAR



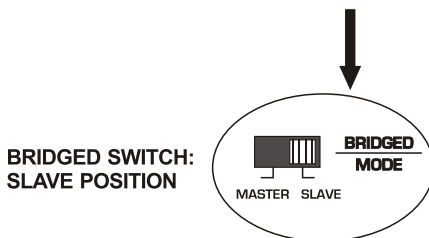
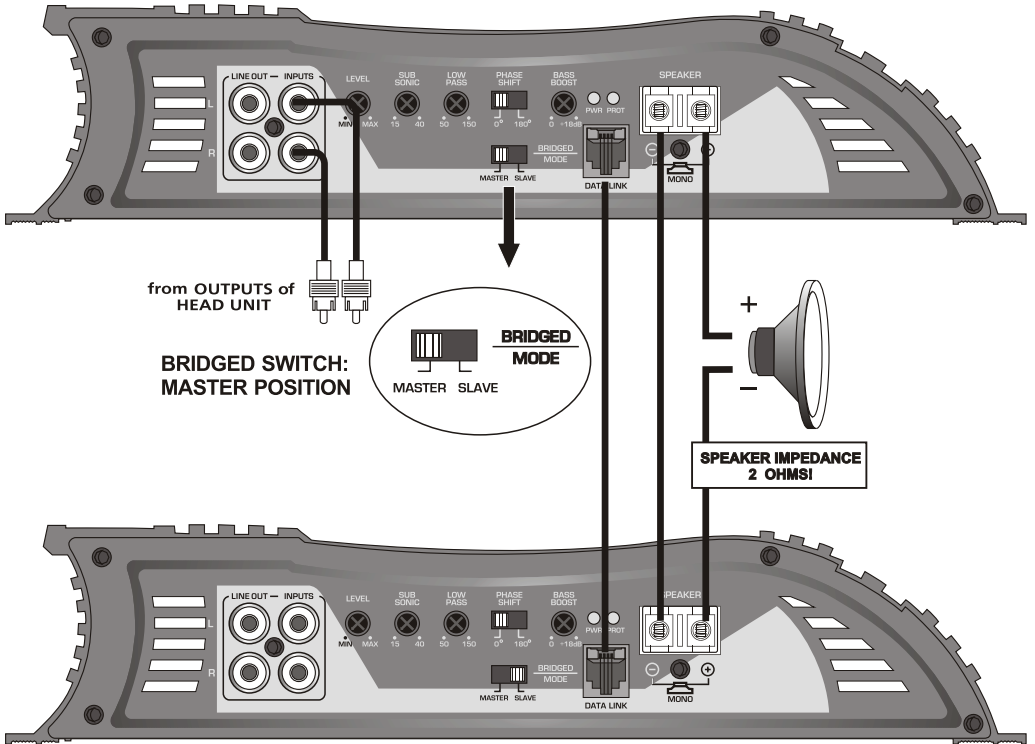
| FUSE |
|-------------------|
| PS1-2000D:30A X 2 |
| PS1-3000D:30A X 3 |
| PS1-4000D:30A X 4 |
| PS1-5500D:30A X 5 |



CONTROLS & FUNCTIONS

BRIDGING TWO AMPLIFIER

■ PS1-2000D / PS1-3000D / PS1-4000D / PS1-5500D



| FUSE |
|-------------------|
| PS1-2000D:30A X 2 |
| PS1-3000D:30A X 3 |
| PS1-4000D:30A X 4 |
| PS1-5500D:30A X 5 |

ADJUSTING & TUNING

Tuning on The Amplifier

The amplifier automatically turns on a few seconds after you turn your vehicle's ignition switch to ACC or ON or turn on your auto sound system, depending upon how you wired the system. The POWER indicator on the top of the amplifier illuminates when the amplifier is on.

Important : Your amplifier requires 150 amps or more of power from your vehicle's battery during operation. To protect your battery from discharging, do not operate the amplifier unless your vehicle is running.

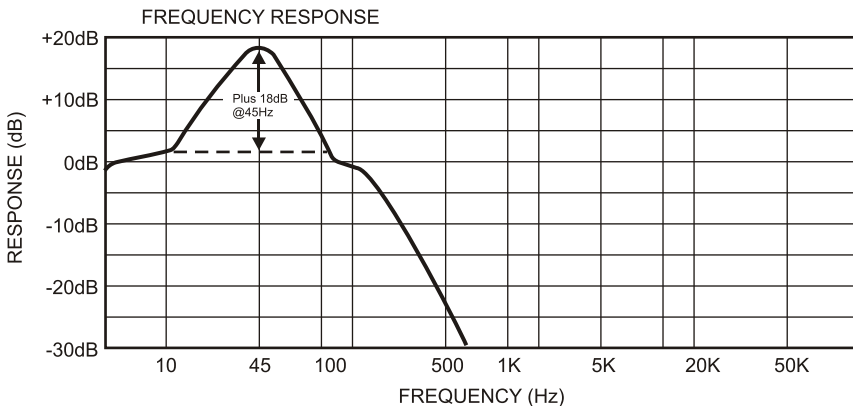
Adjusting The Audio Level ("Gain Matching") By Ear

For best performance, you must match the amplifier's input sensitivity to your source unit's maximum output level. The GAIN CONTROL (MIN / MAX) located on the side of the amplifier is designed to do this. It is NOT a volume control. It adjusts the incoming signal level so that the source unit and amplifier reach maximum output at the same time. This assures that maximum system volume is achieved with minimum distortion.

1. Turn the GAIN CONTROL (MIN / MAX) fully counterclockwise to MIN.
2. Play full frequency music that has continuously high levels (FM pop music is a good choice).
3. Turn up the source unit's volume control until just before you hear the source unit's distortion, or 90% of full output (or whichever comes first).
4. SLOWLY turn the GAIN CONTROL clockwise until just before you hear amplifier or speaker distortion, or until you reach a maximum comfortable listening level (whichever comes first).

Turn the source unit's volume control back down to a desired comfortable listening level and enjoy.

Adjusting BASS BOOST



The BASS BOOST control raises the amplifier output up to 18dB at frequencies tightly centered around 45Hz. This "bump" can have a dramatic affect on the bass system's apparent volume. Use caution(!) When adjusting this control as serious subwoofer damage may result from overpowering or overexcursion.

TROUBLE SHOOTING GUIDE

| SYMPTOMS | CHECK POINTS | CURE |
|------------------------------------|--|--|
| NO SOUND | Is the POWER LED illuminated ? | Check fuses in amplifier. Be sure Remote lead is connected check signal leads. Check gain control. Check Tuner/Deck volume level. |
| | Is the Diagnostic LED illuminated? | Check for speaker short or amplifier overheating. |
| AMP NOT SWITCHING ON | No power to the amplifier | Check power wire or connections. |
| | No power to remote wire with receiver on | Check connections to radio. |
| | Check Fuse | Replace fuse if broken |
| NO SOUND IN ONE CHANNEL | Check speaker Leads | Inspect for short circuit or an open connection. |
| | Check Audio Leads | Reverse left and Right RCA inputs to determine if it is occurring before the AMP |
| AMP TURNING OFF MEDIUM/HIGH VOLUME | Check speaker load Impedance | Be sure proper speaker load impedance recommendations are observed. (If you use an ohm meter to check speaker resistance, please remember that DC resistance and AC impedance may not be the same.) |
| PROTECTION LAMP ON | Temperature shut down | Turn radio down |
| | Speaker wires short | Separate speaker wires and insulate |



SPECIFICATIONS

| | PS1-2000D | PS1-3000D | PS1-4000D | PS1-5500D |
|--|--------------------------|----------------------|----------------------|----------------------|
| 4 Ohm RMS Power | 600W x 1Ch | 900W x 1Ch | 1200W x 1Ch | 1700W x 1Ch |
| 2 Ohm RMS Power | 900W x 1Ch | 1300W x 1Ch | 1700W x 1Ch | 2500W x 1Ch |
| 1 Ohm RMS Power | 1200W x 1Ch | 1700W x 1Ch | 2200W x 1Ch | 3200W x 1Ch |
| MAX Power | 2000W x 1Ch | 3000W x 1Ch | 4000W x 1Ch | 5500W x 1Ch |
| THD | ----- 0.50% ----- | | | |
| Signal to Noise Ratio | ----- 100dB ----- | | | |
| Frequency Response | -----15Hz to 150Hz----- | | | |
| Variable Low Pass | ----- 50Hz - 150Hz ----- | | | |
| Variable Subsonic | -----15Hz - 40Hz ----- | | | |
| Variable Bass Boost | ----- 0 ~ +18dB ----- | | | |
| Phase Control | ----- 0 to 180° ----- | | | |
| Input Sensitivity | ----- 200mV to 8V ----- | | | |
| Input Impedance | ----- 10K - Ohm----- | | | |
| Line Output Impedance | ----- 100 Ohm ----- | | | |
| Peak Current consumption, at rated power into 1 Ohm | 90 Amps | 120 Amps | 160 Amps | 190 Amps |
| Dimensions (W x H xL) | 11.4" x 2.4" x 10.8" | 11.4" x 2.4" x 12.4" | 11.4" x 2.4" x 14.8" | 11.4" x 2.4" x 17.5" |
| Fuse Rating | 30 x 2 | 30 x 3 | 30 x 4 | 30 x 5 |



NOTE





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