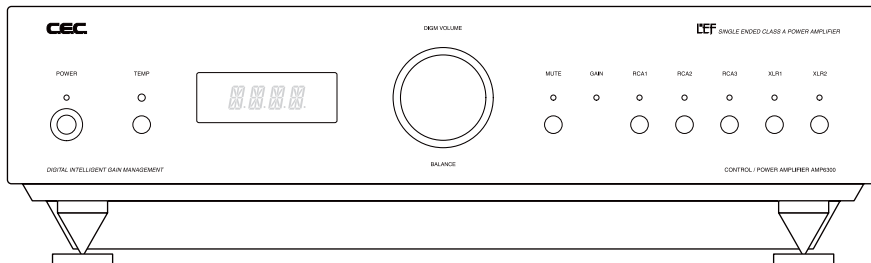


Control / Power Amplifier

AMP6300

Owner's Manual

LEF SINGLE ENDED CLASS A POWER AMPLIFIER



DIGITAL INTELLIGENT GAIN MANAGEMENT

C.E.C.

Contents

- Introduction 3
- Important Safety Instructions 4
- Handling Precautions 7
- Accessories 9
- Front Panel Functions 10
- Rear Panel Functions 14
- Remote Control Unit..... 17
- Cautions regarding Handling 20
- Maintenance 22
- Troubleshooting 22
- Specifications 23

Introduction

Thank you for purchasing the AMP6300.

Please refer to this Owner's Manual to use your AMP6300 safely, and in the best possible way. It is recommended that you keep the carton box and the packing material available for future transportation needs.

Features:

- The AMP6300 is a high-power (190W+190W) single-ended pure A class control/power amplifier combining excellent linearity and efficiency. Its entire circuitry is fully balanced, from input to output. This enables a radical reduction in noise and distortion, and a major improvement in sound quality.
- The AMP6300 also features DIGM (Digital Intelligent Gain Management). This unique volume control technology digitally controls the amplifier gain itself without any input signal dilution. Left and right volume balance can be also adjusted digitally without signal dilution.
- The AMP6300 uses the newest version of the LEF (Load Effect Free) technology in its analog circuitry, which frees it of negative feedback circuitries that affect the sound signal, and enables high output and high quality audio reproduction unaffected by transistor characteristics.
- The AMP6300 offers a 6dB-gain option independently for each input connection, for balancing output volumes between different sources. This minimizes the volume adjustments required when alternating sources between CD/DVD players and 0dBU tuners/phonograph preamplifiers.
- The AMP6300 features a noise-free bearing fan combined with a sensor, coupled with a large heatsink on its base, which help maintain adequate internal temperature. The current internal temperature can be displayed on the VFD.

Important Safety Instructions



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to potential electric shock hazards within the product's enclosure.



The exclamation point within an equilateral triangle is intended to notify the user to the presence of important operating and maintenance (servicing) instructions in the accompanying documentation.

WARNING : TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions
- 5) Do not use the AMP6300 near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install the AMP6300 near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

- 9) (For USA, Canada:) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, with one blade wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet. (For European Countries:) Do not defeat the safety purpose of the grounding-type plug. This plug has two poles and a third grounding hole. The third hole is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the AMP6300's power cord from being walked on or pinched, especially around the plugs, convenience receptacles, and where it exits the AMP6300's casing.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Only use the AMP6300 with a cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the unit. If using a cart, exercise caution when moving the cart/unit combination to avoid injury from it tipping over.
- 13) Unplug the AMP6300 during lightning storms or when leaving it unused for extended periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the AMP6300 itself, its power-supply cord, or plug has been damaged in any way, when liquids have been spilled onto the AMP6300, when foreign objects have fallen into the AMP6300, when the AMP6300 has been exposed to rain or moisture, when the AMP6300 does not operate normally, or when the AMP6300 has been dropped.



- Do not expose the AMP6300 to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on the AMP6300.
- Do not install the AMP6300 in a confined space, such as within a book case or similar piece of furniture.
- Plug the AC power cord into an easily accessible AC wall outlet, so it can be quickly unplugged in case of emergency.

CAUTION

- DO NOT REMOVE THE PROTECTIVE HOUSING WITH A SCREW-DRIVER.
- USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
- IF THE AMP6300 SEEMS TO BE MALFUNCTIONING, CONTACT A QUALIFIED SERVICE STATION. DISCONTINUE USE OF ANY MALFUNCTIONING UNIT.

For CANADA

AC POWER CORD CONNECTION

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH THE BLADE WIDTH OF THE PLUG TO THE SLOT WIDTH. THE PLUG MUST BE FULLY INSERTED TO THE SLOT.

Handling Precautions

- 1. Before connecting or disconnecting other devices, unplug the AMP6300's AC power cord from the outlet.**

- 2. To avoid noise from your speakers, turn your system components on or off in the following order:**

Power on: Turn on other devices connected to the AMP6300's inputs first, before turning the AMP6300 on.

Power off: Turn the AMP6300 off first, before turning off any connected devices.

- 3. Handle with care**

Avoid exerting excessive force to the knobs and cabinet on the AMP6300.

- 4. Installation**

Use of an audio rack is recommended to maximize the sound quality and performance of the AMP6300. Installation and use of the AMP6300 in the locations described below may cause deterioration in sound quality or malfunction:

- Locations exposed to direct sunlight - such as windowsills, and other exceptionally warm locations - such as near heating appliances (surrounding temperature higher than 35 °C), or exceptionally cold locations (surrounding temperature lower than 5 °C), can prevent the AMP6300 from functioning properly.
- Damp locations exceeding 90% humidity may cause the AMP6300's metal parts to rust, causing the unit to malfunction.
- Dusty locations may cause the AMP6300 to malfunction. The accumulation of dust inside the heatsink or the internal fan may lower the performance of the cooling system. It may also cause contact failure of the switches, and/or noise.
- Otherwise, avoid installing the AMP6300 close to other transformers and electrical motors, so as to prevent the pickup of induction hum. Also, avoid mounting the AMP6300 on surfaces that may be affected by vibration.

- 5. Avoid lightning strikes**

Disconnect the AC power cord from the AC outlet when there is a thunderstorm in your vicinity.

6. Condensation

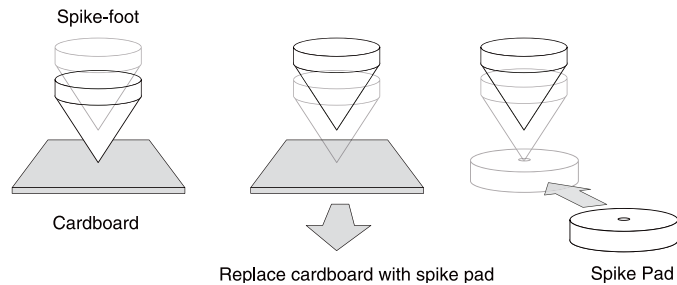
When the AMP6300 is brought into a warm room when the exterior temperature is cold, or when the room temperature rises sharply from using a heater, condensation may form both inside and outside the AMP6300, hampering its performance. If this happens, leave the AMP6300 unused in the room for 1 to 2 hours (depending on the amount of condensation), so as to bring the AMP6300's temperature closer to the room temperature. The condensation should go away gradually.

7. Listening etiquette

When adjusting the sound volume level, make sure you do not disturb other people and your neighborhood.

8. Handling of the Spike-Feet

The AMP6300 features tapered “spike” –type feet on its base for improved sound quality. These can cause injury unless handled with care. When you install the AMP6300, use pieces of cardboard temporarily to protect the surface in contact with the spike-feet while adjusting the unit's placement. Replace them with the provided spike pads when the unit is in place.



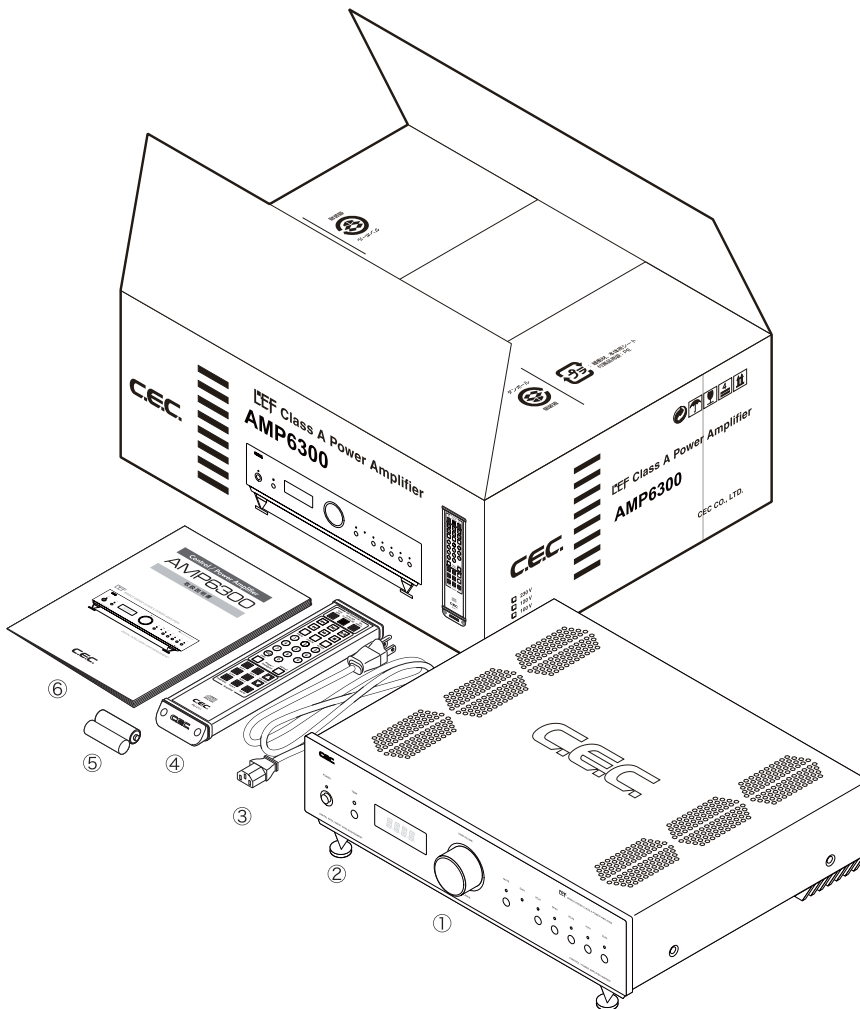
Accessories

The packaging for the AMP6300 should contain the following:

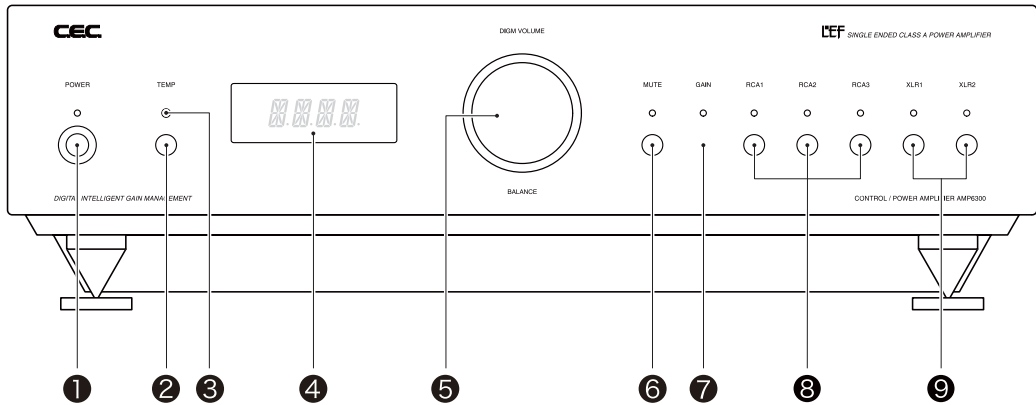
1. AMP6300 unit
2. Spike Pad x 4
3. AC power cord
4. Remote control unit
5. Two AA batteries for the remote control unit
6. Owner's Manual

Note: Keep the carton box and packing material available for future transportation needs.

The AC power cord is for use with the AMP6300 exclusively, and should not be used for other devices.



Front Panel Functions



❶ POWER

Press the POWER button to turn the AMP6300 on.

The DISPLAY to the left of the VOLUME knob should briefly read “WAIT”. The AMP6300 should become operational around 7 seconds later, once the DISPLAY shows “10” (the current volume level).

Note: The volume is set to “10” by default whenever the unit is powered on.

If you need to turn the POWER off and back on again, wait for 20 seconds after turning the unit off to prevent malfunction.

Pressing the POWER button again turns the AMP6300 off. The volume level should be set to the minimum (“00”) position prior to turning off the AMP6300.

❷ TEMP

Press the TEMP button to show the current temperature of the internal heatsink on the DISPLAY. The DISPLAY will revert to show the current volume level around 5 seconds later.

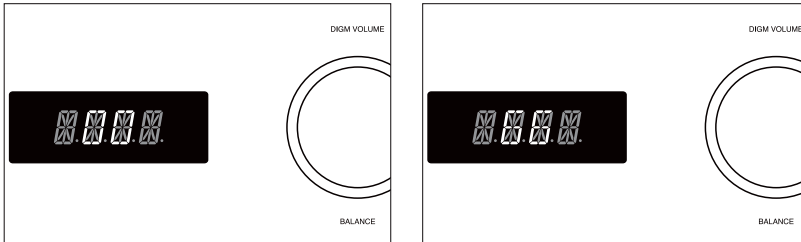
❸ REMOTE CONTROL RECEIVER

When operating the remote control, point it towards the REMOTE CONTROL RECEIVER. Make sure nothing is blocking the AMP6300's front panel, where the REMOTE CONTROL RECEIVER is located.

❹ DISPLAY

The DISPLAY defaults to showing the current volume level, which can be adjusted

in 1dB increments from “00” to “66”. Whenever the left and right balance setting has been adjusted (refer to section ⑤ DIGM VOLUME/BALANCE), a dot will be displayed to the right of the volume level. (e.g. “ 10. ”)



⑤ DIGM VOLUME / BALANCE

Turn the VOLUME/BALANCE knob clockwise to increase volume in 1dB increments from “00” to “66”.

Turn the VOLUME/BALANCE knob counterclockwise to decrease volume in 1dB decrements.

Note: The volume is set to “10” by default whenever the AMP6300 is powered on.

If you need to adjust the volume balance between the left and right speakers, press the VOLUME / BALANCE knob once. The DISPLAY should now read “00” (or the previous balance setting, if you have already adjusted the balance).

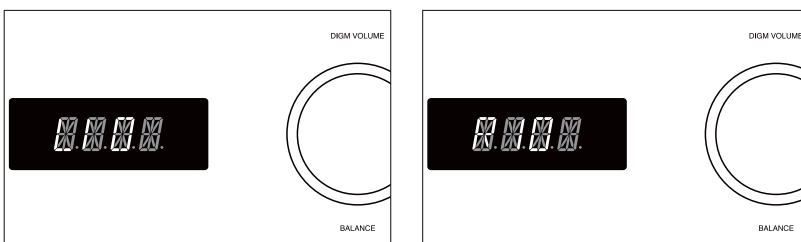
Turning the volume knob to the left increases the volume gain for the left channel in 1dB increments from “L01” to “L10”.

Turning the volume knob to the right increases the volume gain for the right channel in 1dB increments from “R01” to “R10”.

The DISPLAY will revert to showing the current volume level around 5 seconds later following balance adjustment. If the BALANCE function is active, a dot will be displayed to the right of the volume level.

To cancel the BALANCE setting, press and hold the VOLUME / BALANCE knob for around 3 seconds until the DISPLAY shows “00”.

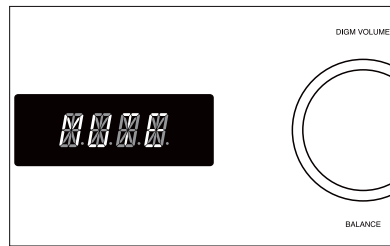
* The adjusted BALANCE setting will be memorized and can be reused even after turning the AMP6300 off and back on.



⑥ MUTE

Press the MUTE button if you ever need to temporarily turn the sound off. The indicator above the MUTE button will light up and the DISPLAY will show “MUTE” whenever this function is active. To cancel MUTE mode, press the MUTE button again.

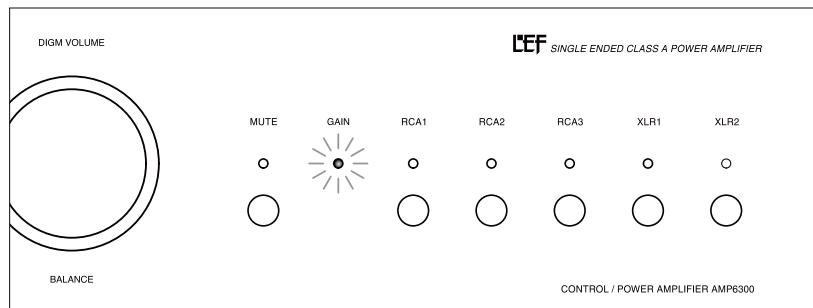
NOTE: The MUTE mode will be also cancelled if you turn the VOLUME/BALANCE knob. The VOLUME level will be set to “00”.



* The input indicator will be turned off whenever the MUTE function is active.

⑦ GAIN Indicator

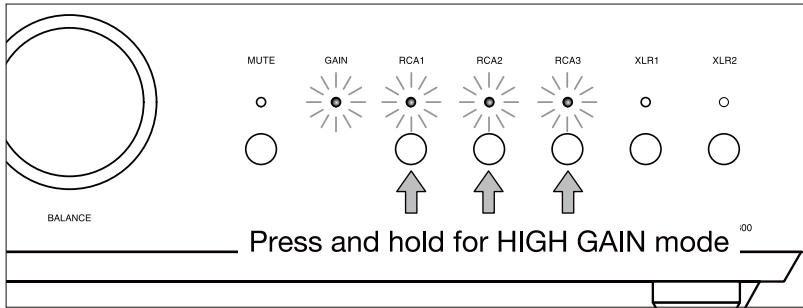
The GAIN indicator will light up whenever the HIGH GAIN function (refer to section ③) is active for the selected INPUT.



⑧ RCA1/RCA2/RCA3 INPUT Selector

Press the RCA1, RCA2 or RCA3 button to select an unbalanced INPUT source. The indicator corresponding to each input selector will light up to show the current INPUT selection.

If you are using an external source with a low output (such as an analogue tuner or tape deck), you can activate the HIGH GAIN option by pressing and holding the corresponding INPUT button for around 3 seconds. This feature will light up the GAIN indicator and increase input gain by 6dB. This HIGH GAIN option can be set individually for each INPUT.



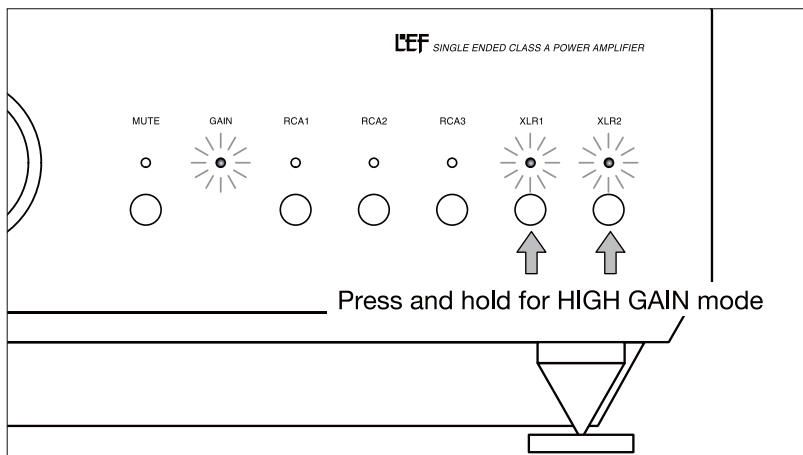
To cancel the HIGH GAIN setting, press and hold the corresponding INPUT button for around 3 seconds until the GAIN indicator is turned off.

Note: The output sound may become distorted if you use the HIGH GAIN setting for an external source with a normal output. Please cancel the HIGH GAIN setting if this happens.

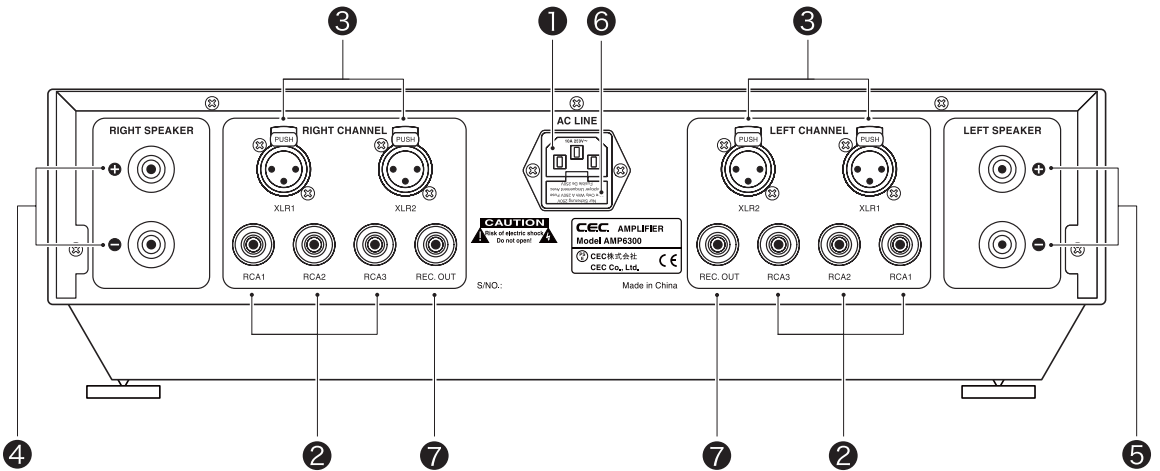
*The AMP6300 will memorizes the state of the HIGH GAIN setting and restore it even after turning the unit off and back on.

⑨ XLR1/XLR2 INPUT Selectors

Press the XLR1 or XLR2 button to select a balanced INPUT source. The indicator corresponding to each input selector will light up to show the current INPUT selection. Similarly to the RCA INPUT selectors, you can press and hold the corresponding INPUT button to activate the HIGH GAIN setting for that INPUT.



Rear Panel Functions



① AC LINE

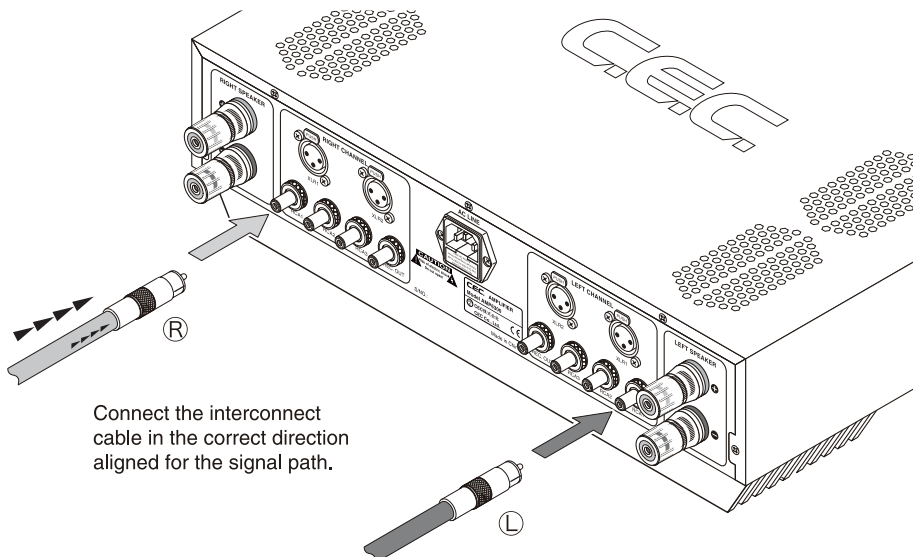
Connect the provided AC power cord to the AC LINE inlet.

② RCA inputs (RCA1 / RCA2 / RCA3)

Line in audio signal input jacks equipped with unbalanced RCA connectors.

Use interconnect RCA cables to connect the RCA1/RCA2/RCA3 inputs to external sources with RCA line outputs, such as CD players, tuners or tape decks.

* Phono and digital sources cannot be connected to RCA1, RCA2 or RCA3.



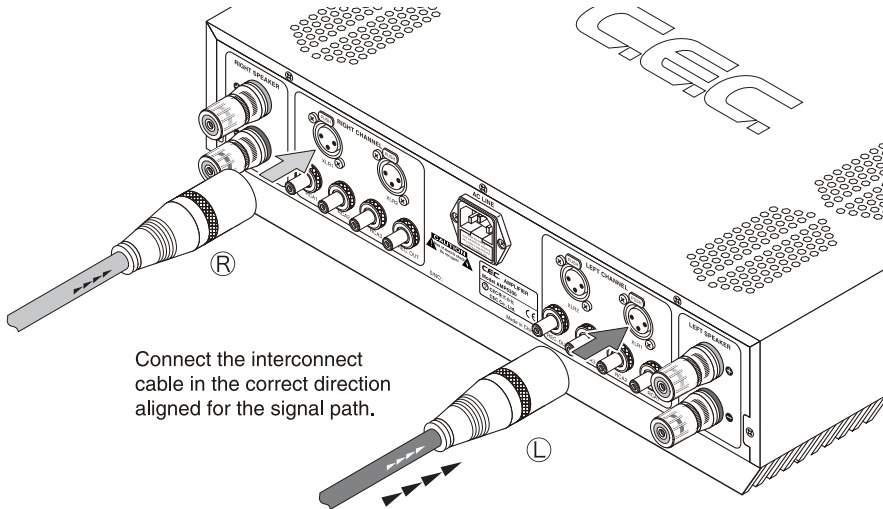
Connect the interconnect cable in the correct direction aligned for the signal path.

③ XLR inputs (XLR1 & XLR2)

Line in audio signal input jacks equipped with balanced XLR connectors.

Use interconnect XLR cables to connect the XLR1/XLR2 inputs to external sources with XLR line outputs, such as CD players or DVD players.

(Pinning: 1=Ground, 2=Hot, 3=Cold)

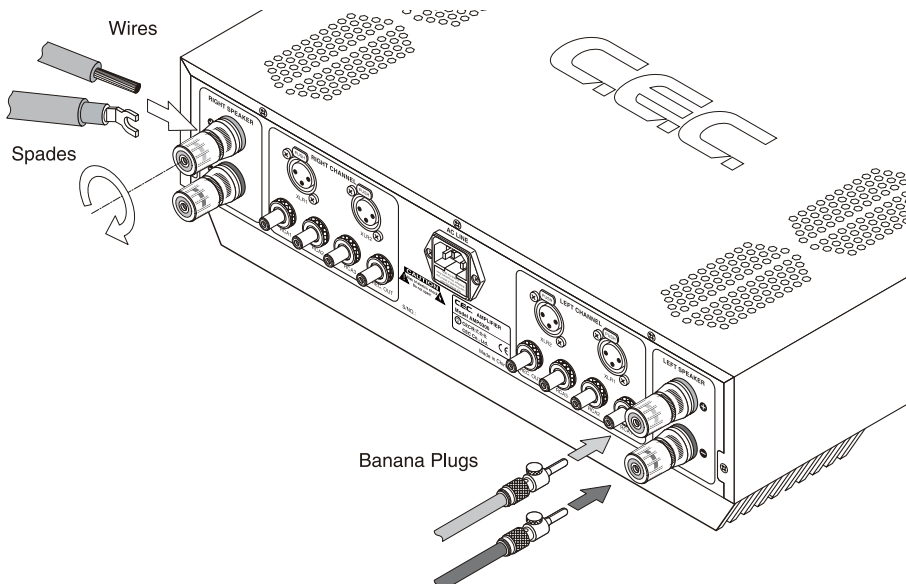


* Phono and digital sources cannot be connected to XLR1 and XLR2.

④⑤ RIGHT/LEFT SPEAKER

Power amplifier output terminal for the right/left speaker. The red terminal is for (+) the black one is for (-).

Banana plugs, spades and wires can be connected.

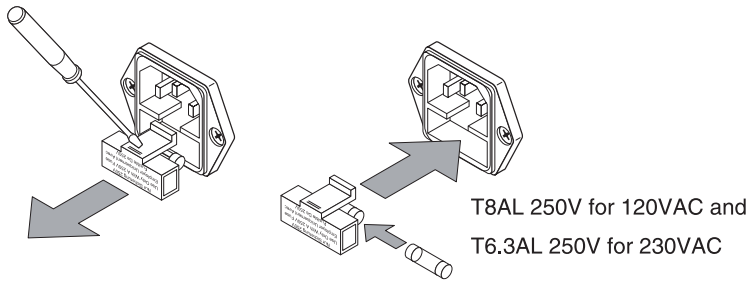


Note: Make sure to turn the AMP6300 off when connecting speaker cables.

6 FUSE

The AMP6300's FUSE is located inside the FUSE box.

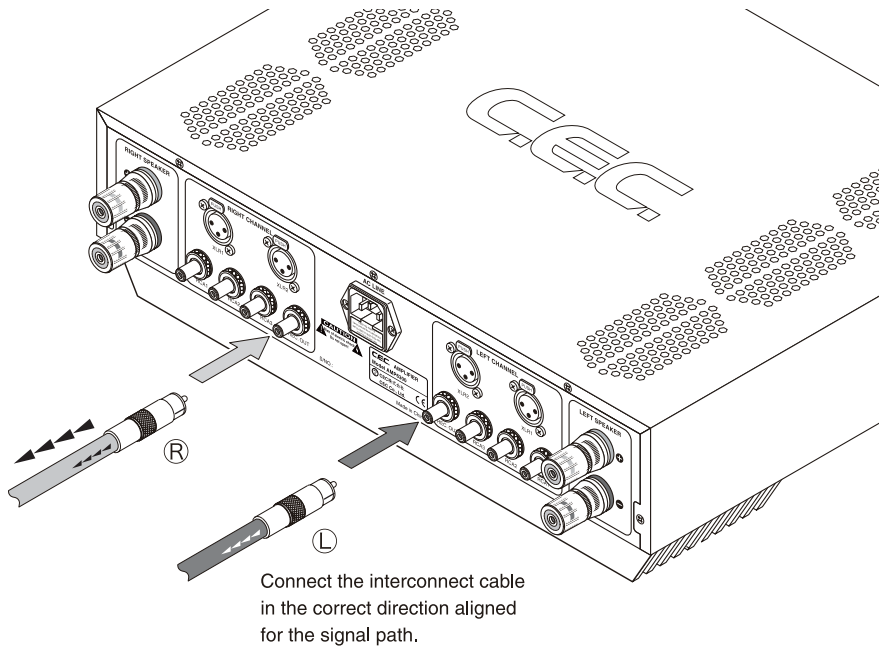
If the FUSE is broken, gently extract the box with a small flat screwdriver. Replace the FUSE with a new one and replace the box inside the AMP6300.



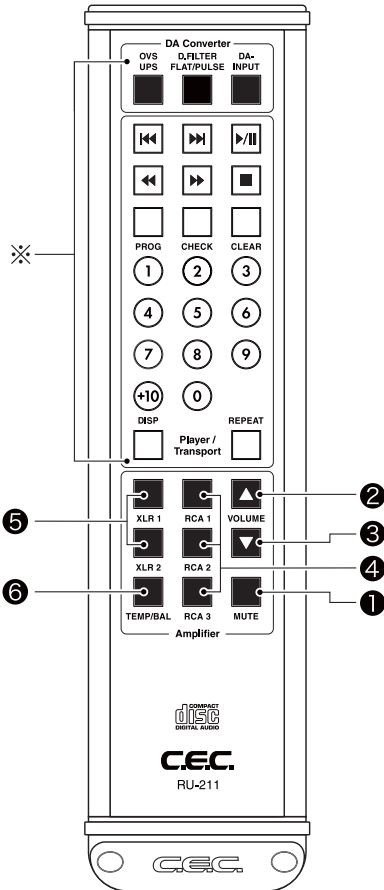
7 REC. OUT

Line out audio signal output jacks equipped with unbalanced RCA connectors.

Use interconnect RCA cables to connect the REC. OUT terminals to an external recording device with an RCA input, such as a CD recorder, MD recorder or tape recorder.



Remote Control Unit



* The other buttons on the provided remote control unit will work with CEC's line of CD players (such as the CD5300), but are not used for the AMP6300.

❶ MUTE

Press the MUTE button to mute the AMP6300. The DISPLAY will show "MUTE".

To cancel MUTE mode, press the MUTE button again.

NOTE: The MUTE mode will be also cancelled if you press any volume button. The volume level will be set to "00".

* The input indicator will be turned off whenever the MUTE function is active.

❷ VOL. ▲

Press the VOL. ▲ button to increase the volume level in 1dB increments up to 66.

Press and hold the VOL. ▲ button to increase the volume level continuously.

Note: Beware of high volume settings.

❸ VOL. ▼

Press the VOL. ▼ button to decrease the volume level in 1dB decrements down to 00.

Press and hold the VOL. ▼ button to decrease the volume level continuously.

❹ RCA1/RCA2/RCA3

Press the RCA1/ RCA2 / RCA3 button to select an unbalanced INPUT source. The indicator corresponding to each input selector will light up to show the current INPUT selection.

❺ XLR1/XLR2

Press the XLR1 / XLR2 button to select a balanced INPUT source. The indicator corresponding to each input selector will light up to show the current INPUT selection.

❻ TEMP/ BALANCE

Press the TEMP/ BALANCE button once to adjust the right and left BALANCE - the DISPLAY will show the increment level of the gain. Pressing the VOL ▲ button increases the volume gain for the right channel and pressing the VOL. ▼ button increases the volume gain for the left channel.

Press this button again to show the AMP6300's internal temperature on the DISPLAY.

The DISPLAY will revert to show the current volume level around 5 seconds later.

Precautions when using the remote control unit

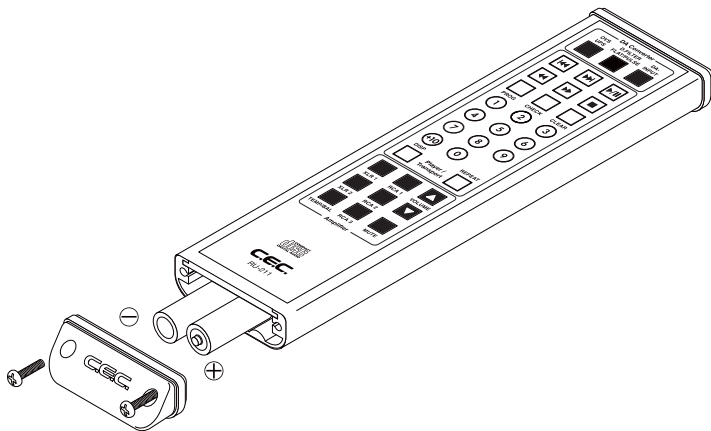
- Avoid exposing the remote control receiver on the AMP6300's front panel to direct sunlight or other light sources, as such exposure can cause malfunction.
- When operating the remote control, point it towards the remote control receiver. Make sure nothing is blocking the AMP6300's front panel, where the remote control receiver is located.
- Battery drain may cause the remote control unit to malfunction. Change the batteries to new ones of the same type (AA) if this happens.
- This manual only explains how to use the remote control unit with the AMP6300, but this unit can be used with other CEC products (CD players, etc.).
- The remote control unit is heavy, and should be handled with care. Dropping it on fragile surfaces (e.g. glass tables) can result in damage.

Battery Replacement

If the distance at which the remote control unit can be used to operate the AMP6300 seems to be decreasing, the batteries may need to be replaced.

Battery Installation

Unscrew the battery compartment cover using a Philips screwdriver, and remove the cover. Insert the provided two AA batteries into the compartment. Make sure that the batteries are inserted with their positive (+) and negative (-) poles positioned correctly, and screw the cover back on.



Battery Precautions



- Never use different types of batteries together. Both rechargeable or non-rechargeable batteries can be used, but the two should not be used together.
- If you will not be using the remote control unit for an extended period of time (more than a month), remove the batteries to prevent leakage.
- If the batteries leak, use a cloth to wipe away the liquid inside the battery compartment and replace the batteries with new ones.
- Do not heat or disassemble batteries, and never dispose of old batteries by throwing them in a fire. Dispose of batteries following laws in the local area.

Cautions regarding handling

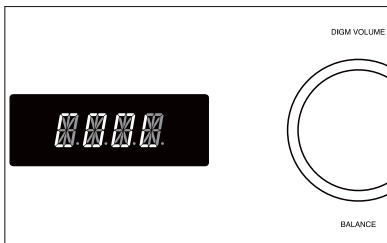
- Never connect the speaker output terminals to a ground. Both speaker terminals are active due to the full balanced circuit design of the AMP6300. Be careful when connecting active subwoofers or similar devices to the speaker terminals. A short circuit to the ground may result in damage to the AMP6300 or a broken fuse.
- DC voltage at the speaker terminals is not 0 when measured in relation to the ground. However, the differential voltage from (+) to (-) speaker terminals is actually 0 and thus harmless to the speakers.
- Never make a short circuit between the (+) speaker terminal and the (-) speaker terminal. The short circuit may result in damage to the AMP6300.
- The AMP6300's volume settings are entirely digital. If you are using the AMP6300 with digital equipment with standard output levels, such as CEC's CD players and DA converters, make sure you do not exceed 55 if you are using 8 ohm speakers, 53 if you are using 4 ohm speakers. Depending on the local AC voltage and the music signal, volume settings exceeding this limit may induce clipping and distort the playback output.
- The HIGH GAIN option (+6dB) should only be used for devices with output levels lower than 1Vrms. Using the HIGH GAIN option for devices with standard output levels may result in output distortion.
- Amplifiers produce heat. The AMP6300 features an intelligent thermal control system which maintains adequate operating temperatures. When used with high volume settings in a high-temperature environment, an internal fan will help keep the temperature in the optimal range. Make sure to leave space open around the AMP6300 (at least 15cm) to keep the air circulating. Make sure you do not block the air intake on the top panel, or the fan exhaust and heatsink on the bottom panel. Blocking these openings may cause overheating and severe damage to the AMP6300.

Always use the provided spike pads to maintain appropriate space between the AMP6300 and the surface below it and help the heat dissipate effectively.
- Use of a solid audio rack is recommended to avoid environmental resonance and maximize the sound quality and performance of the AMP6300.

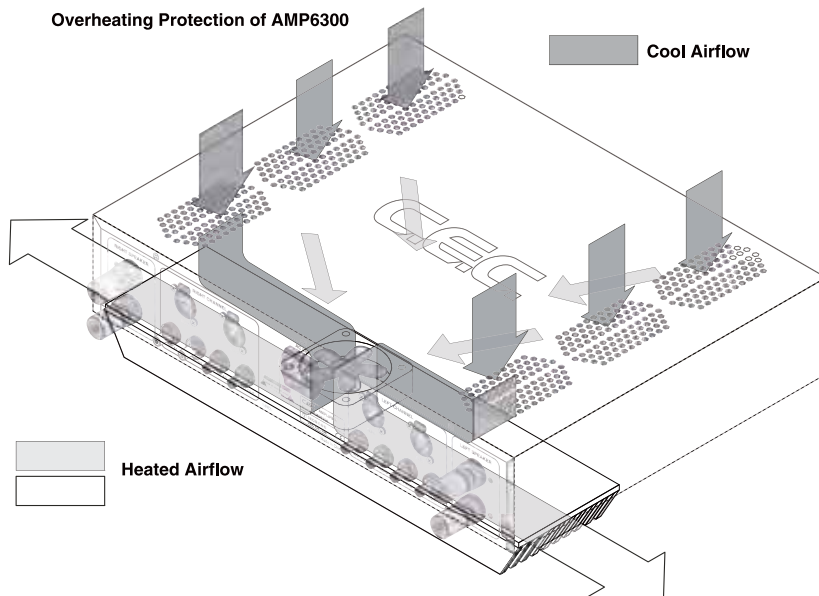
Overheating Protection

- The AMP6300 features two methods of overtemperature protection.

At around 35°C the fan starts to take in air through the top panel and discharging it through the bottom and side vents. The air flow will gradually increase according to the temperature. If the temperature ever exceeds 65 °C, the AMP6300 will automatically turn itself off until cooled down. The DISPLAY will read “COOL” during this cooling phase. The AMP6300 will return to normal functionality once the internal temperature cools down to 45°C or below.



* The AMP6300's power cannot be turned on if the internal temperature is over 60°C.



- Dusty environments may cause the AMP6300's cooling fan to malfunction. The accumulation of dust on the air intake may lower the performance of the cooling system and cause overheating.

Maintenance

- The AMP6300 requires no periodic maintenance and contains no user-serviceable parts.
- If the surface of the AMP6300 case is soiled, wipe with a soft cloth or use diluted neutral cleaning liquid. Be sure to remove any fluid completely. Do not use thinner, benzene or alcohol as these may damage the surface of the AMP6300 case. Polishing powder, bleach, or aerosol spray may also damage its surface.
- The AMP6300's fuse is contained under the AC INLET on the rear panel (see Page 16), and can be replaced by the user if broken. Pull the fuse box and replace the fuse with a new one. If the new fuse continues to blow after replacement, there may be a malfunction with the AMP6300's internal circuitry. If this happens, please contact the store where you purchased the AMP6300, or an authorized CEC service center, and arrange for repairs.

Troubleshooting

If you suspect a malfunction in the unit, please check the following chart before calling your dealer.

No power

Check the connection at the both ends of the AC power cord. Make sure there is power at the wall outlet.

No sound

Check the connection from the external source, e.g. the CD player.
Check the operation of the external source, e.g. the CD player.

STOP is displayed

Turn the AMP6300 off and unplug the AC power cord from the outlet. Wait for a minute, plug the AC power cord back in and turn the AMP6300 on again.

Unresponsive to remote control

Point the remote control towards the remote control receiver on the front panel.
Remove any objects blocking the receiver.
Use the remote control unit at a shorter distance from the AMP6300.
Replace the batteries in the remote control unit with new ones.

Specifications

Output power	190W+190W (8Ω), 256W+256W (4Ω)
Frequency response	1.5Hz - 300kHz, +0dB / -3dB, 1W
S/N ratio	95dB (A-weighted, 1W)
THD	0.008%, (1W)
Dumping Factor	320 (8Ω, 10W)
Input gain	0dB, +6dB
Input terminal	2 x balanced XLR, 3 x unbalanced RCA
Output terminals	Speaker Out put x 1, REC OUT (RCA) x 1
Power Supply	AC120V/230V 60Hz/50Hz (specified on the rear panel)
Power consumption	Min. 75W, Max. 600W
External dimensions	approx. 435(W) x 373(D) x 125(H)mm (incl. legs and terminals)
Weight	approx. 16kg
Accessories	AC power cord, Spike pad x 4, AA battery x 2, Remote control unit, Owner's manual
Color	Silver

* Design and specifications are subject to change without notice.

* Illustrations on the Owner's Manual may be slightly different from the unit due to design improvements.

CEC

CEC Co., Ltd. Japan
