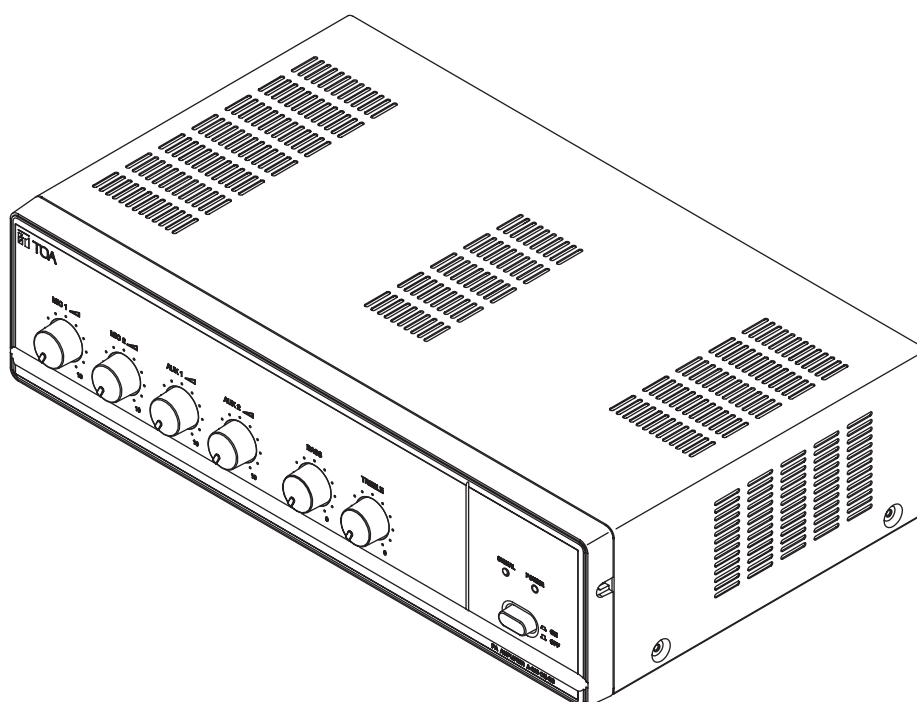




OPERATING INSTRUCTIONS

PA AMPLIFIER

A-230 CE-GB



Thank you for purchasing TOA's PA Amplifier.

Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

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1. IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one 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 into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
- When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



2. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazard



WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.



CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.



WARNING

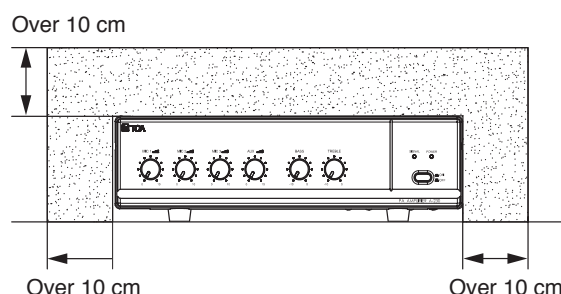
When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Be sure to ground to the safety ground terminal to avoid electric shock. Never ground to a gas pipe as a catastrophic disaster may result.

- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- The terminals marked with the symbol ⚡ are hazardous live. The external wiring to these terminals requires installation by an instructed person.
- The apparatus shall be connected to a mains socket outlet with a protective earthing connection.
- Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.
- To avoid electric shocks, be sure to unplug the unit's power supply cord when connecting speakers.
- Be sure to follow the instructions below when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
 - Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other arrangements to prevent it from falling down.
 - When connecting the unit's power cord to an AC outlet, use the AC outlet with current capacity allowable to the unit.
 - No rack-mounting screws are supplied with the unit. Separately prepare the appropriate screws for the rack.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the AC outlet and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
 - If you detect smoke or a strange smell coming from the unit.
 - If water or any metallic object gets into the unit
 - If the unit falls, or the unit case breaks
 - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
 - If it is malfunctioning (no tone sounds.)
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to you nearest TOA dealer.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.
- Keep the A-230 amplifier over 10 cm away from objects that may obstruct air flow to prevent the unit's internal temperature rise.



When the Unit is in Use

- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock.

⚠ CAUTION

When Installing the Unit

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.

An all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



ATTENTION

- L'appareil ne doit pas être exposé aux éclaboussures ou écoulements et tous objets remplis de liquide, tels que vases, ne doivent pas être sur l'appareil.

3. GENERAL DESCRIPTION

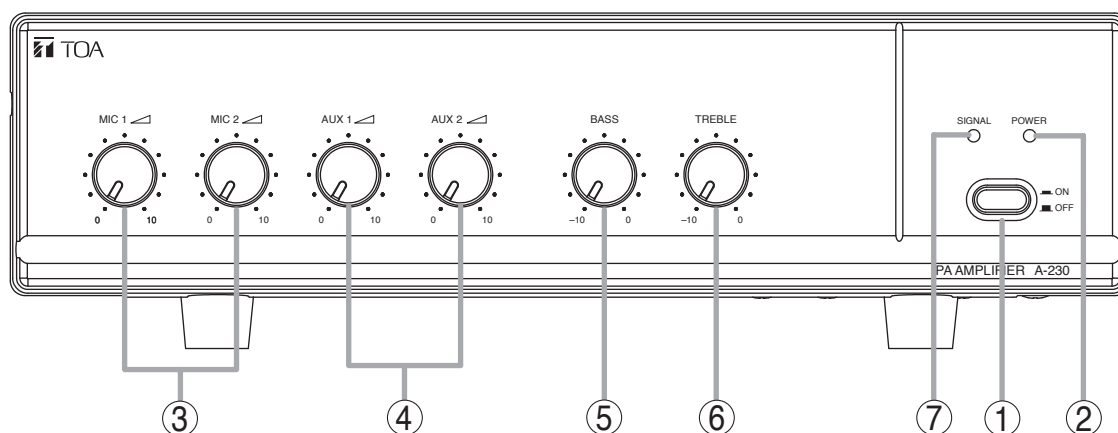
TOA's PA amplifier A-230 is a high cost-performance mixer power amplifier suited for paging announcement or background music in schools, offices, shops, factories, mosques, churches, and small rooms.

4. FEATURES

- High durability, high reliability, and high cost performance
- Two microphone inputs, two AUX inputs
- Speaker output of constant voltage distribution system (100 V) and low impedance (4 Ω)
- Muting function
- Independent input volume controls
- Independent tone controls of cut type for both high and low frequencies
- MIC 1 input is equipped with a 5-pin DIN connector to provide muting control
- Current limiter circuitry protects transistors, and the thermal protection circuitry prevents a failure due to overheat.

5. NOMENCLATURE AND FUNCTIONS

[Front]



1. Power switch

Press to turn on the power.
Press again to turn off the power.

2. Power indicator

Lights green when power is switched ON.

3. Microphone volume controls

Adjust the microphone level.

4. AUX volume controls

Adjust the AUX level.

5. Bass control

Adjusts bass response. Rotate counterclockwise to reduce it. The maximum position "0" provides flat characteristics.

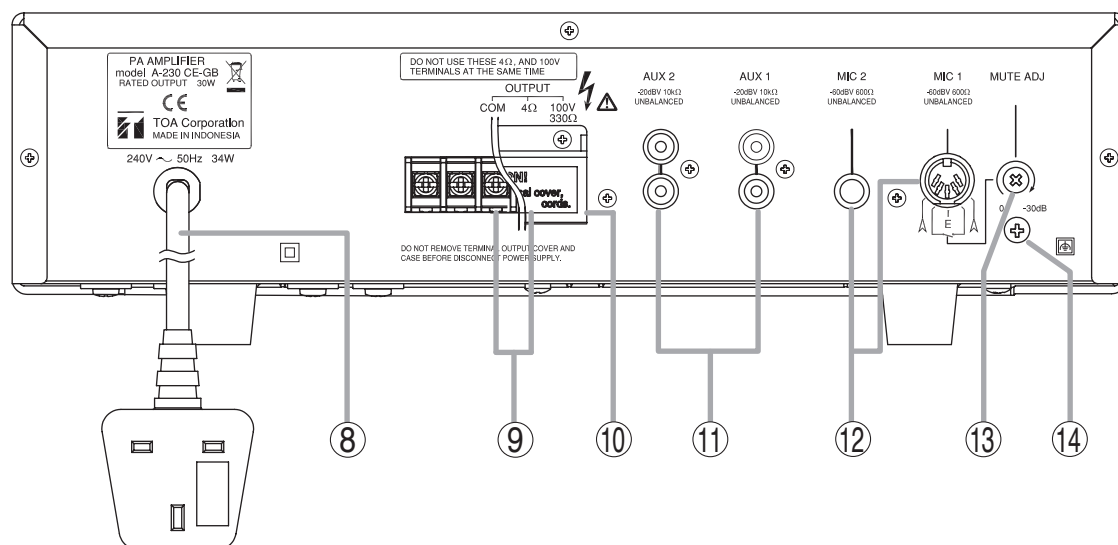
6. Treble control

Adjusts treble response. Rotate counterclockwise to reduce it. The maximum position "0" provides flat characteristics.

7. Signal indicator

Lights green when power is switched ON, and indicates an output signal level.

[Rear]



8. AC power cord

Connects to an AC power source.

9. Output terminals

Connect to speakers. When connecting speakers, use only one of the speaker output terminals, low or high impedance.

10. Terminal cover

To avoid electric shock due to high voltage from output terminals, replace the terminal cover after connection completion.

11. AUX 1 and AUX 2 input terminals

–20 dB* (100 mV), 10 kΩ, unbalanced, monaural RCA pin jacks. Accept external equipment output signal. (Refer to "Input Connections" on p. 8.)

* 0 dB = 1 V

12. MIC 1 and MIC 2 inputs

- **(Mic 1 : 5-pin DIN socket)**
–60 dB* (1 mV), 600 Ω, unbalanced.
Use a 5-pin DIN plug connector.
(Refer to "Input Connections" mentioned below.)
- **(Mic 2 : Single pole phone jack)**
–60 dB* (1 mV), 600 Ω, unbalanced.
(Refer to "Input Connections" mentioned below.)

13. Muting level control

Adjusts the background music level 0 to 30 dB to be automatically reduced when priority function is operated.






14. Protective ground terminal

WARNING

In addition to the supplied power cord connection, be sure to ground this terminal to the safety ground terminal to avoid electric shock. Leave all these works to a qualified electrician.

* 0 dB = 1 V

• Explanation of Symbols

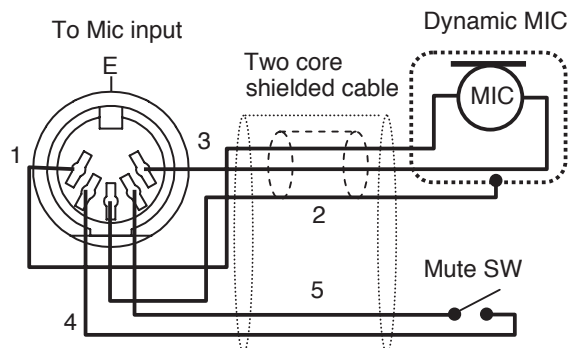
Symbol	Explanation
	Front panel: Volume controls for the microphone and Aux inputs: turn them clockwise to increase the volume, turn them counter-clockwise to decrease the volume.
	Do not trash this device into normal waste. Use the foreseen electric waste collection places.
	This mark is a declaration that this product complies with all applicable EU directive and regulations.
	Do not touch the parts indicated with this symbol. These can provide a dangerous voltage that can result in death or serious personal injury when touching them.
	Warning: Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

6. CONNECTIONS

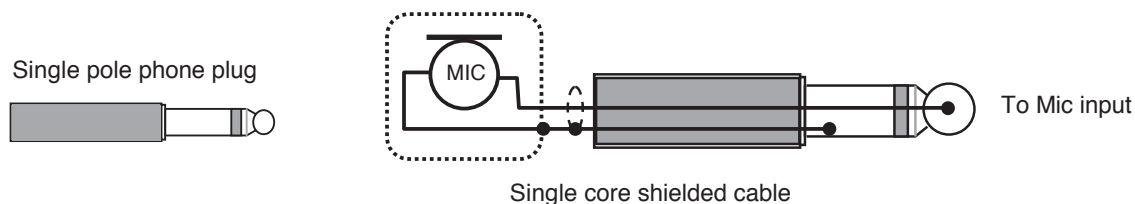
6.1. Input Connections

· Mic 1 Connection (5-pin DIN plug) 5-pin DIN connection

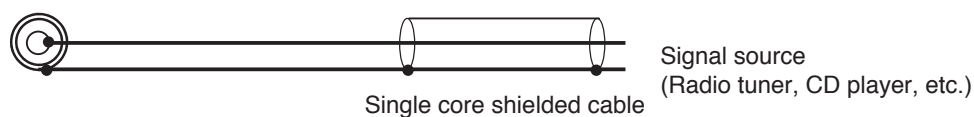
Pin-1: Hot, Pin-2: Earth, Pin-3: Cold, Pin-4 and Pin-5: mute switch. When pin-4 is shorted with pin-5, the muting function is operated.



· Mic 2 (Phone plug)



· AUX input connections (RCA pin jack)

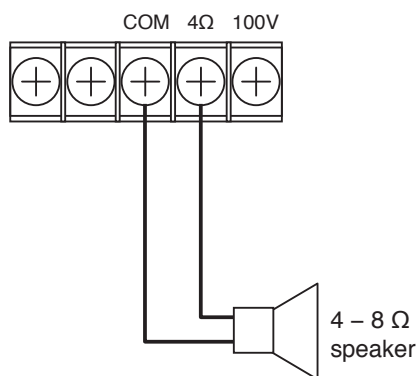


6.2. Output Connections

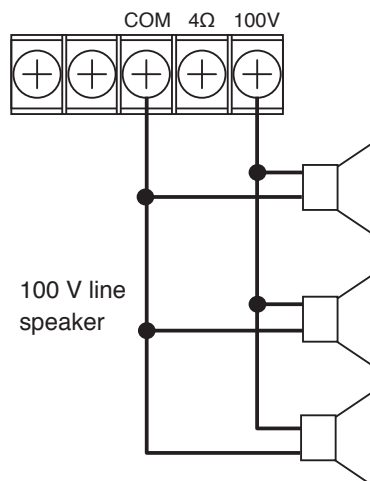
⚠ CAUTION

Be sure to replace the supplied terminal cover after connection completion. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.

· Low impedance speaker



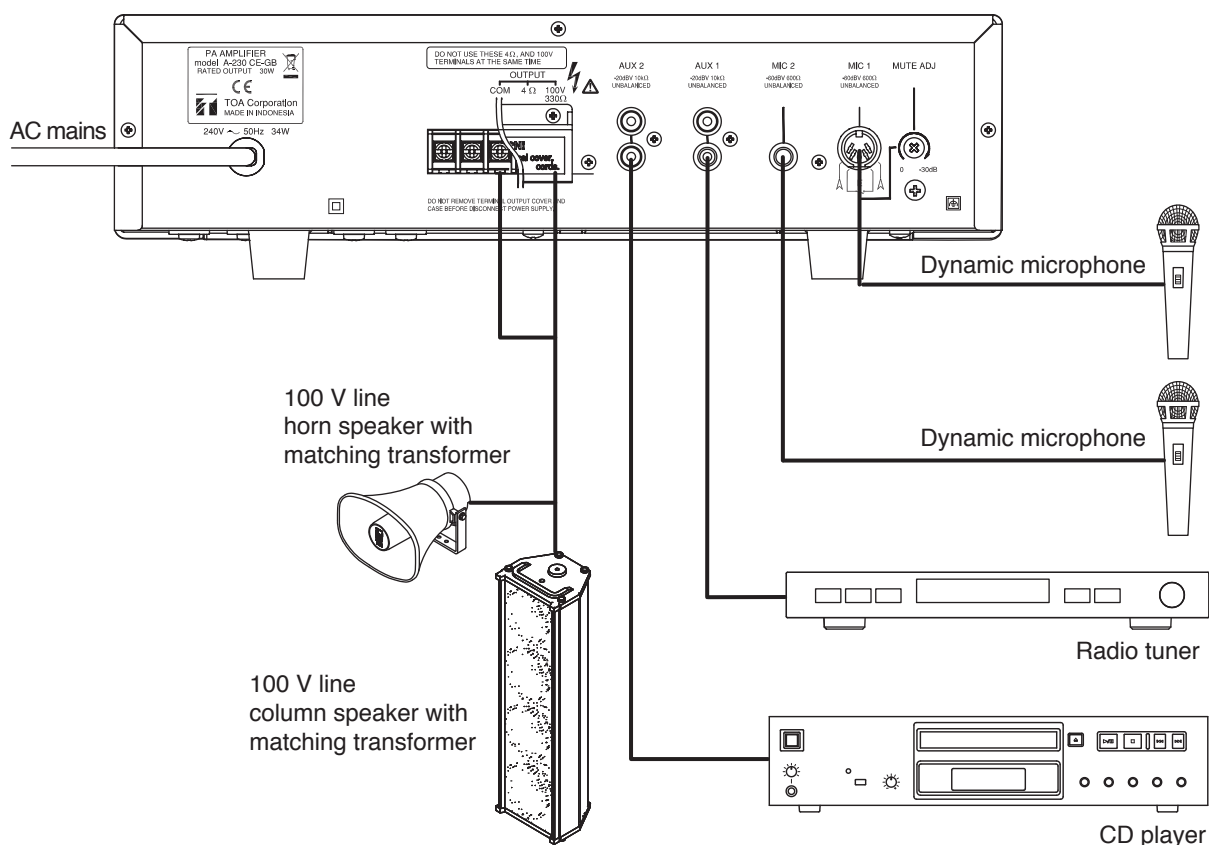
· 100 V line speaker



Notes

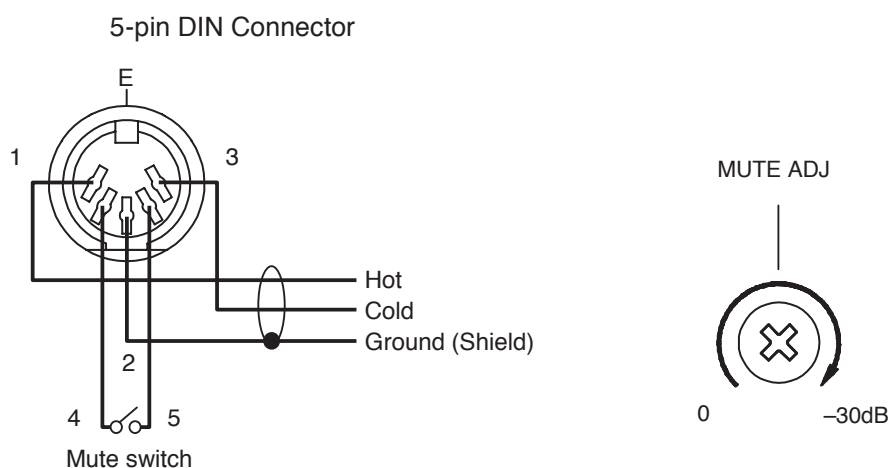
- The 4 Ω and 100 V terminals cannot be used at the same time.
- Impedance indicated above the terminal represents the total speaker (load) impedance. Total impedance of 100 V line is 330 Ω.

6.3. Example of External Equipment Connections



7. MUTING FUNCTION

Shorting DIN plugs pin-4 and pin-5 of rear-mounted Mic 1 input allows Mic 1 input to reduce the volume of Mic 2, Aux 1, and Aux 2 inputs by 0 to 30 dB. The attenuation level is preset for -30 dB at the factory. We recommend using TOA's microphone PM-222D or PM-660D to bring the best results.

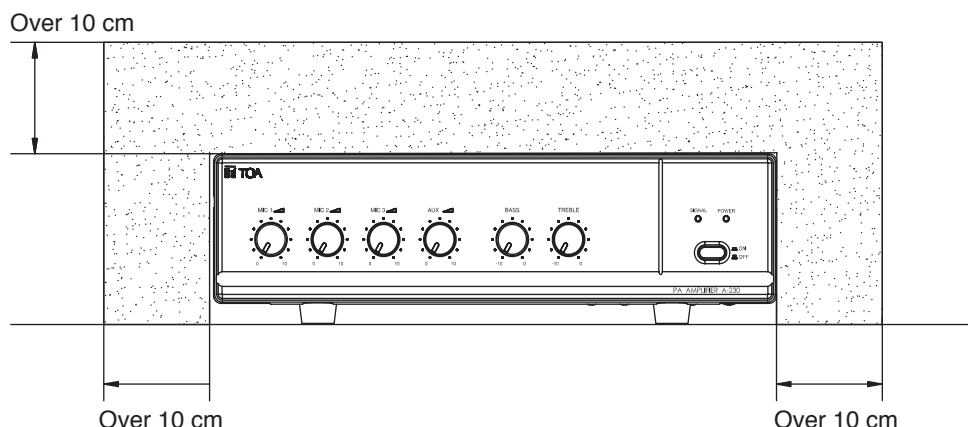


Remark: About Mute function

- When a Mute switch connected across pins 4 and 5 is closed, the Mute circuit works promptly.
- It returns to the previous state after 3 seconds when the Mute switch is opened.

8. INSTALLATION

Keep the unit over 10 cm away from objects that may obstruct air flow to prevent the unit's internal temperature rise.

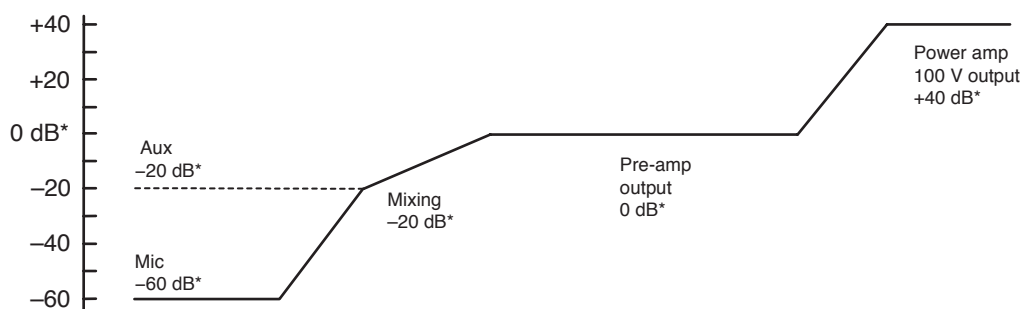
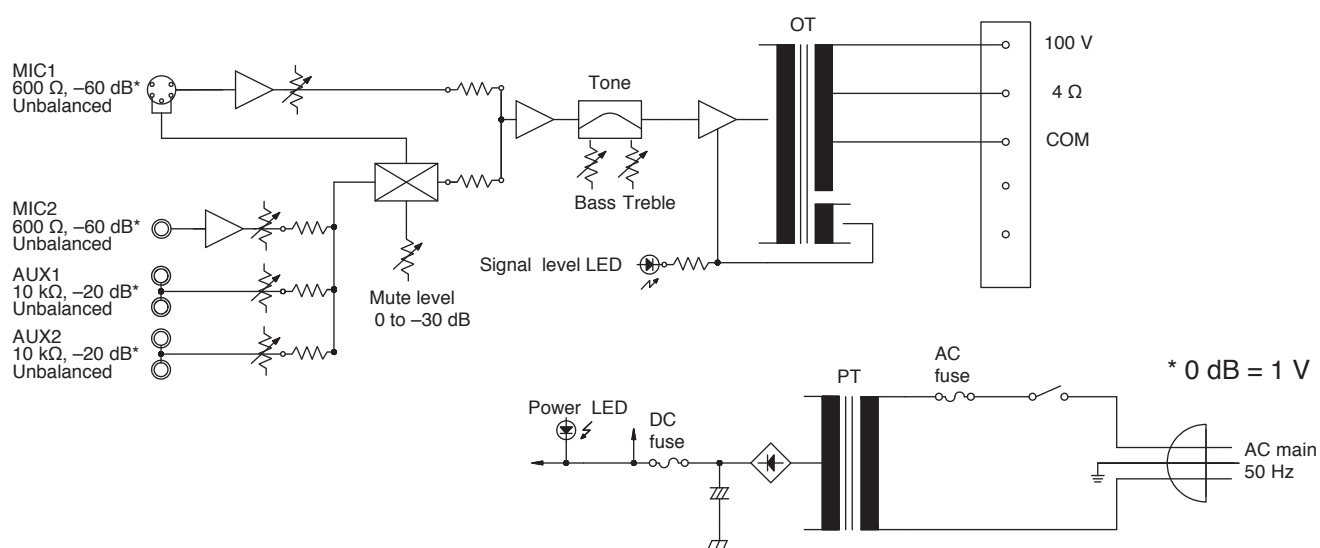


9. VOLUME CONTROL SETTINGS

Output levels are adjustable with individual volume controls. For music play or announcement, adjust the corresponding volume control so that the signal output is not distorted.

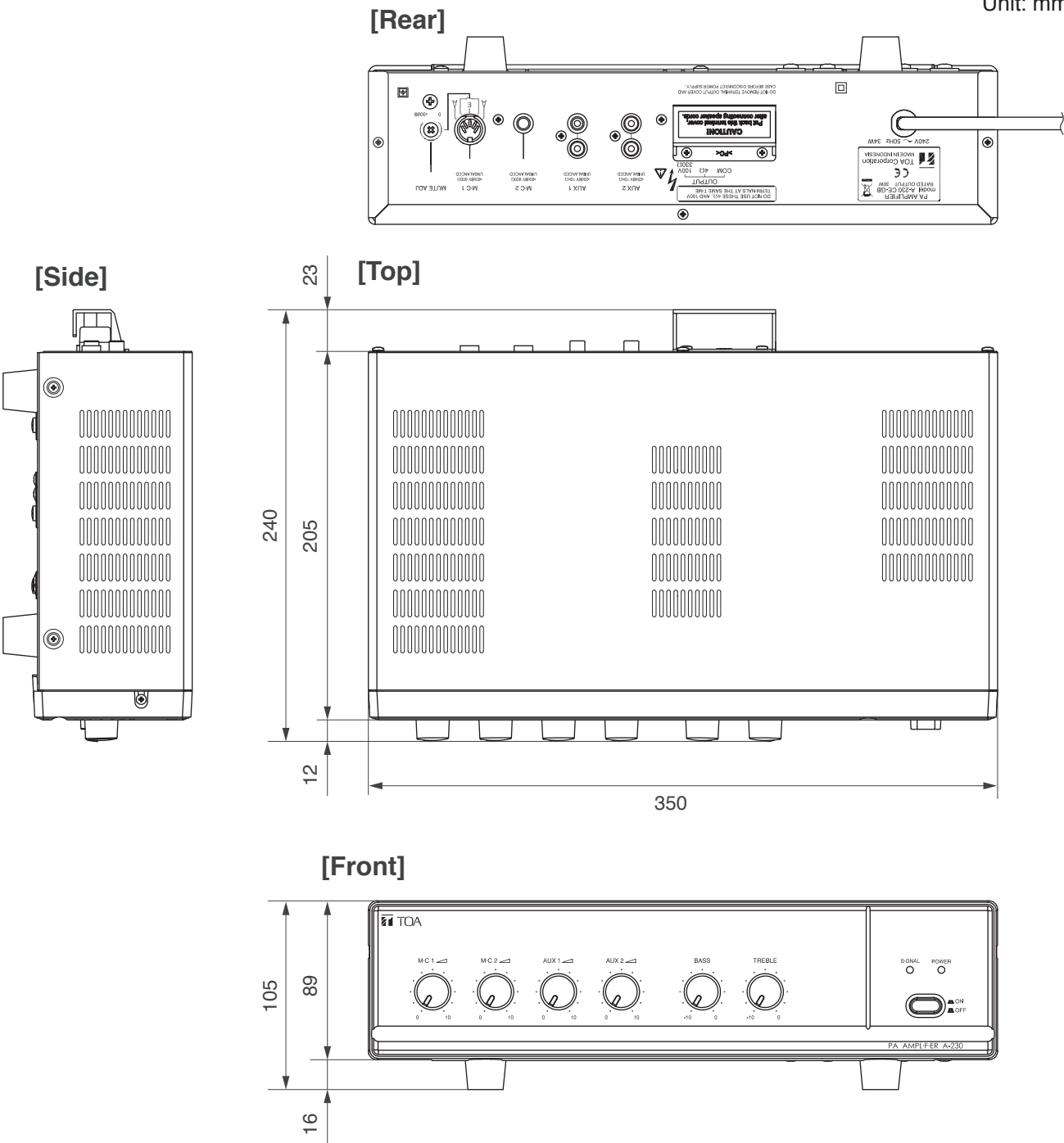
Note that the sound quality is downgraded when the output is distorted.

10. BLOCK AND LEVEL DIAGRAM



11. DIMENSIONAL DIAGRAM

Unit: mm



12. SPECIFICATIONS

Power Source	240 V AC, 50 Hz
Rated Output	30 W
Power Consumption	34 W (AC operation at EN60065)
Frequency Response	50 Hz to 20 kHz
Distortion	1% or less at 1 kHz, 1/3 rated power
Input	MIC 1: -60 dB* (1.0 mV), 600 Ω, unbalanced, equivalent to 5-pin DIN type MIC 2: -60 dB* (1.0 mV), 600 Ω, unbalanced, equivalent to phone jack type AUX 1,2: -20 dB* (100 mV), 10 kΩ, unbalanced, RCA pin jack
Output	Speaker out: Floating balanced High impedance: 330 Ω (100 V) Low impedance: 4 Ω (11 V)
Signal to Noise Ratio	60 dB or more (MIC 1, 2) 70 dB or more (AUX 1, 2)
Tone Control	Bass: -10 dB at 100 Hz Treble: -10 dB at 10 kHz
Muting	MIC 1 overrides other MIC input and AUX inputs with 0 to 30 dB attenuation by switch
Indicator	Power LED, Signal LED
Operating Temperature	-10 to +40 °C
Finish	Panel: ABS resin, black, hairline Case: Steel plate, black, paint
Dimensions	350 (w) x 105 (h) x 240 (d) mm
Weight	3.5 kg

* 0 dB = 1 V

Notes

- Specifications are measured on 230 V AC.
- The design and specifications are subject to change without notice for improvement.

Traceability Information for Europe

Manufacturer:
TOA Corporation
7-2-1, Minatojima-Nakamachi, Chuo-ku, Kobe, Hyogo,
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Authorized representative:
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URL: <https://www.toa.jp/>