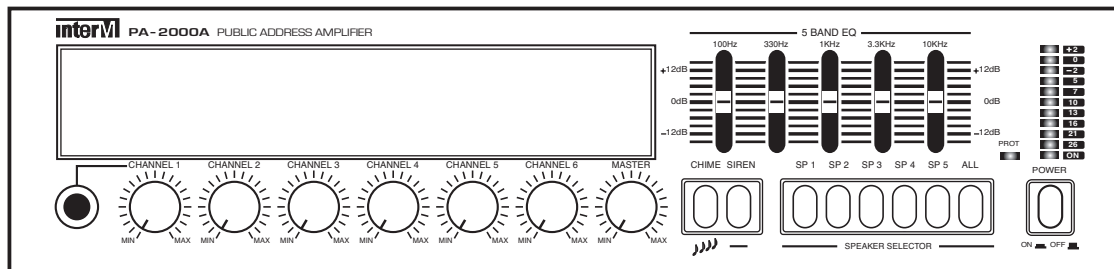


Operation Manual

PA-2000A/4000A Public Address Amplifier



interM

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Welcome

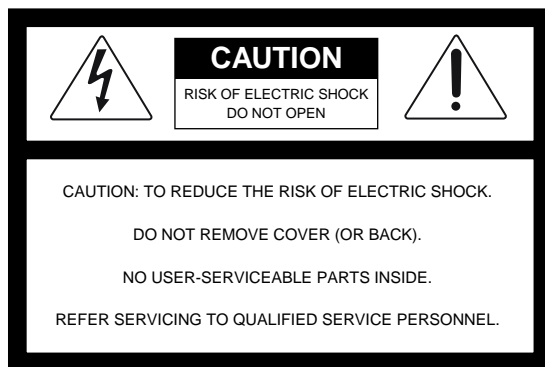
A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!

Warning



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

*Do not install this equipment in a confined space such as a book case or similar unit.

*The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

*Worded: "WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings."



This symbol 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.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.

Unpacking

Although your PA-2000A/4000A is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

Installation

Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. 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.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.



Features

- SIX INPUT CHANNELS WITH ADJUSTABLE INPUT SENSITIVITY AND INDIVIDUAL LEVEL CONTROLS

Rear-panel level controls adjust each input channel from Mic to Aux level.

- FIVE-BAND GRAPHIC EQUALIZER

Five-band graphic equalizer allows you to shape the tonal balance of your program material.

- SPEAKER SELECT

Six speaker select switches enable you to select any combination of up to five speakers.

- PHONO LEVEL INPUT

Switchable input level on Channel 6 allows for connection of phono level source.

- ANNOUNCEMENT CHIME AND SIREN

Convenient four-tone chime and electronic siren for use with announcements.

Accessories

One detachable AC power cord is provided for use with this product.

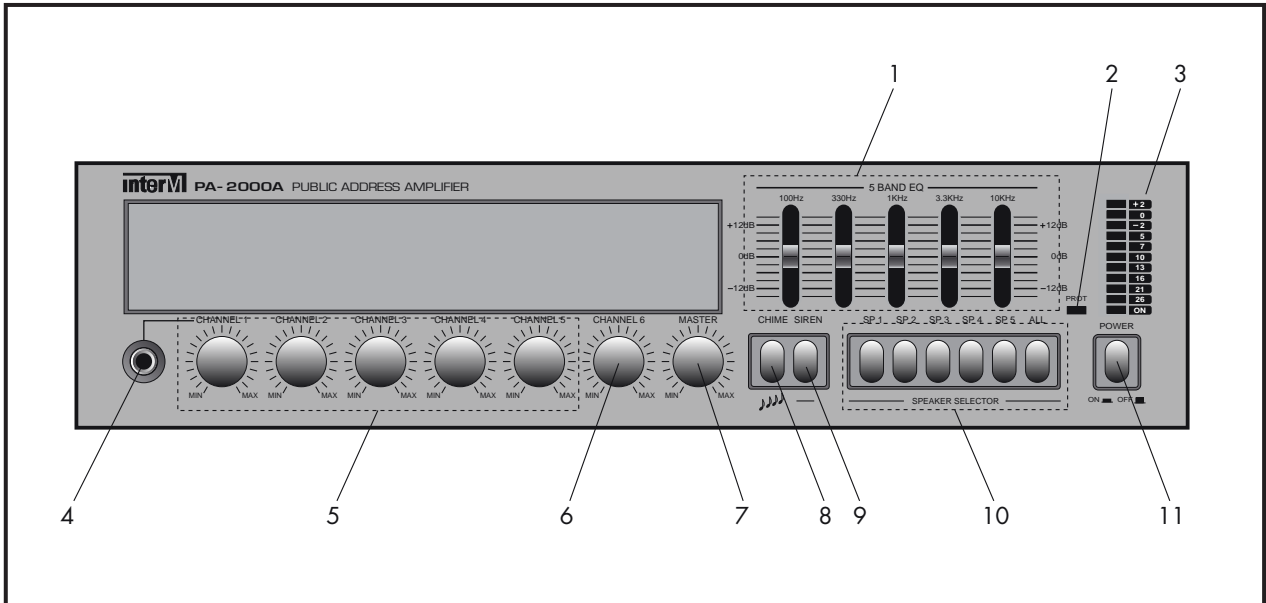
Operation

Make certain that speakers and input sources are properly connected before switching on.

Keep volume levels turned down before switching on.

NOTE: The system's operation is delayed by approximately three seconds after pressing the power switch. This is due to the built-in protection circuitry, designed to protect the speakers and other system components.

Front Panel



1. GRAPHIC EQUALIZER

Each slider controls the cut (decreased gain) or boost (increased gain) for its associated frequency band. The middle position indicates flat response (no cut or boost). Moving the slider upwards increases that frequency's gain, while moving it down decreases the level of that frequency.

2. PROTECTION INDICATOR

This LED indicates the state of the amplifier's protection circuitry. When the Protection LED is on (illuminated), the protection circuitry is active, indicating that the unit is not operating normally. This is typically due to overheating or power limiting. Please check the Input and Output condition of the amplifier.

3. OUTPUT LEVEL DISPLAY

This 10-segment LED meter indicates the amplifier's output level in RMS.

4. CHANNEL 1 INPUT

This is an input jack for Channel 1. Inserting a connector into this front-panel jack will override (disconnect) the signal connected to the rear-panel CH1 jack.

5. CH1-CH5 VOLUME

These knobs provide continuous control of the output volume of Channels 1 - 5.

6. CH6/PHONO VOLUME

This knob provides continuous control of the volume of Channel 6 or Phono Input, as selected by the associated rear panel switch.

7. MASTER VOLUME

This knob provides continuous control of the overall volume of the amplifier's output signal.

8. CHIME BUTTON

Pressing this switch activates the chime circuitry.

9. SIREN BUTTON

Pressing this button will activate the siren circuitry. Pressing it a second time will gradually lower the siren signal, turning it off completely after approximately 2.5 seconds.

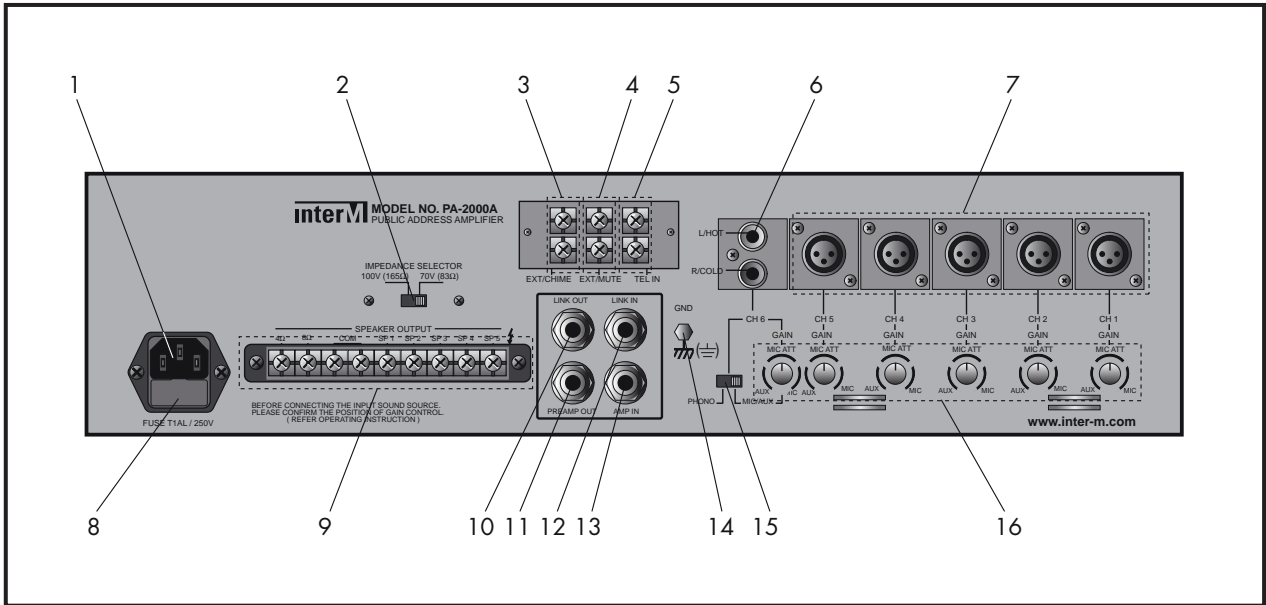
10. SPEAKER SELECTOR

These switches are used to select output to any combination of up to five individual speakers.

11. POWER SWITCH

Pressing this switch turns the unit on, as indicated by the Power LED above the switch. Pressing it again turns the unit off.

Rear Panel



1. AC POWER INLET

Connect this inlet to your AC outlet.

2. IMPEDANCE SELECTOR SWITCH

Selects between low impedance settings of 100V or 70V. Note that this switch is only active when the speakers are connected to the COM terminal and one or more of the SP1-SP5 terminals. When the speakers are connected to the COM terminal and either the 4Ω or 8Ω terminal, this switch is non-functional.

| Impedance Ratings | | |
|-------------------|----------|---------|
| Model | 100 Volt | 70 Volt |
| PA-2000A | 165Ω | 83Ω |
| PA-4000A | 83Ω | 42Ω |

3. EXT CHIME

When these two terminals are shorted, the four-tone chime circuitry is activated.

4. EXT MUTE

When these two terminals are shorted, signals from Input Channels 3-6, turntable is muted. Signals from Channel 1, Channel 2, Link In and Chime are not muted.

5. TELEPHONE INPUT TERMINALS

These terminals are provided for connection with a telephone exchange system for paging purposes.
NOTE: When the telephone input is active, all other input signals except AMP IN are muted.

6. CHANNEL 6 INPUT

Channel 6 input is provided on dual RCA connectors, for use with a CD, Cassette or Phono input.
NOTE: When both inputs are used the signal is summed and combined.

7. CHANNEL 1-5 INPUTS

Channel 1-5 inputs are provided on balanced XLR connectors.

8. FUSE HOLDER

This holder contains the AC overload protection fuse. If the fuse has blown out, replace it with a fuse of the same type and rating, as shown below.

If the fuse continues to blow, refer servicing to a qualified service technician.

| AC Fuse Ratings | | |
|-----------------|------------------|---------------|
| Model | 100VAC – 120 VAC | 230VAC-240VAC |
| PA-2000A | 2A/250V | 1A/250V |
| PA-4000A | 4A/250V | 2A/250V |

9. SPEAKER OUTPUT TERMINAL

These terminals connect up to five speakers in 4Ω, 8Ω or High Impedance mode.

| | | | | |
|----------|----------|--------|---------|-----------|
| PA-2000A | 4Ω/15.5V | 8Ω/22V | 83Ω/70V | 165Ω/100V |
| PA-4000A | 4Ω/22V | 8Ω/31V | 42Ω/70V | 83Ω/100V |

NOTE: Only speakers connected to the High-Impedance terminals are controlled by the front-panel Speaker Selector switches.

10. LINK OUT

This line-level output connects the unit with an external mixdown deck or other recording source.

11. PREAMP OUTPUT

This output connects the unit with an external power amplifier. Inserting a plug into the Preamp Out jack will disconnect signal to the unit's power amp, sending the output of the internal mixer to the external amplifier.

12. LINK IN

This line-level input connects the unit with an external mixer for expanded input channels.

13. AMP IN

This input connects an external mixer or preamp with the unit's power amp. Inserting a plug into the Amp In jack will disconnect all input signal from the unit's internal mixer. Only signal from the external source will be heard.

14. GND TERMINAL

This grounding terminal is provided for connecting with the chassis of a turntable or other input device to reduce hum and other ground loop noise. It may also be connected to a true earth ground, such as an AC third-pin ground or water pipe, to further reduce ground loop noise.

15. CH6/PHONO SELECTOR SWITCH

This switch is used to select the input level for Channel 6. When set to Mic/Aux position, CH6 input is set to Mic/Aux level. When set to PHONO, CH6 input is at Phono level(The product is set to Mic/Aux position, when is assembled).

NOTE: When the CH6 Input selector is set to PHONO, the input gain of CH6 is unaffected by that channel's Input Gain Control.

16. INPUT GAIN CONTROLS

These knobs provide continuous control of the input levels for each of the six input channels. When adjusting the input gain, make certain that the levels are not set too high, or distortion will result.

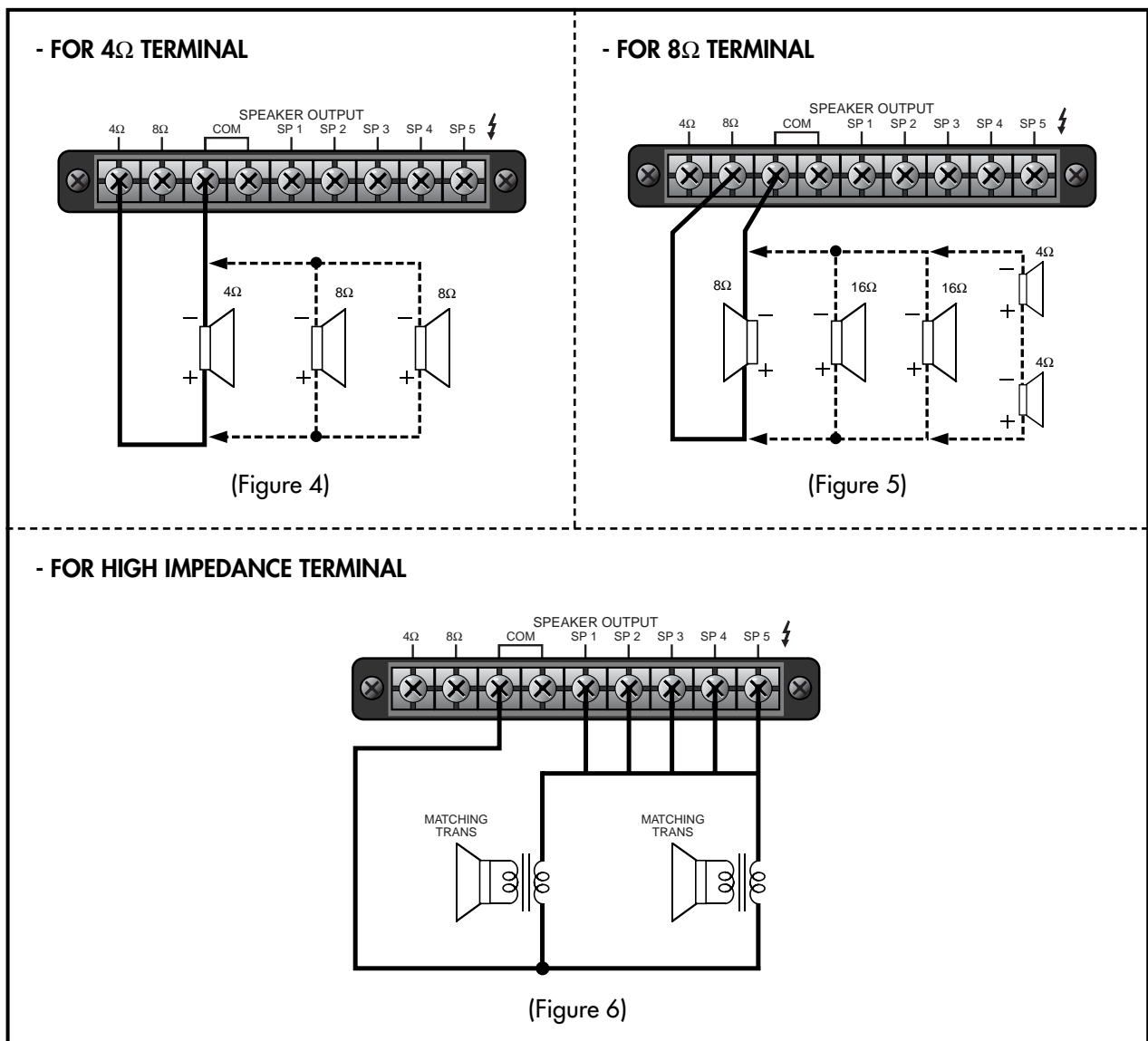
Connecting Speakers

Before connecting speakers to your PA-2000A/PA-4000A unit, be sure to disconnect the AC power cable. Make certain that the total impedance is not less than the rated impedance indicated.

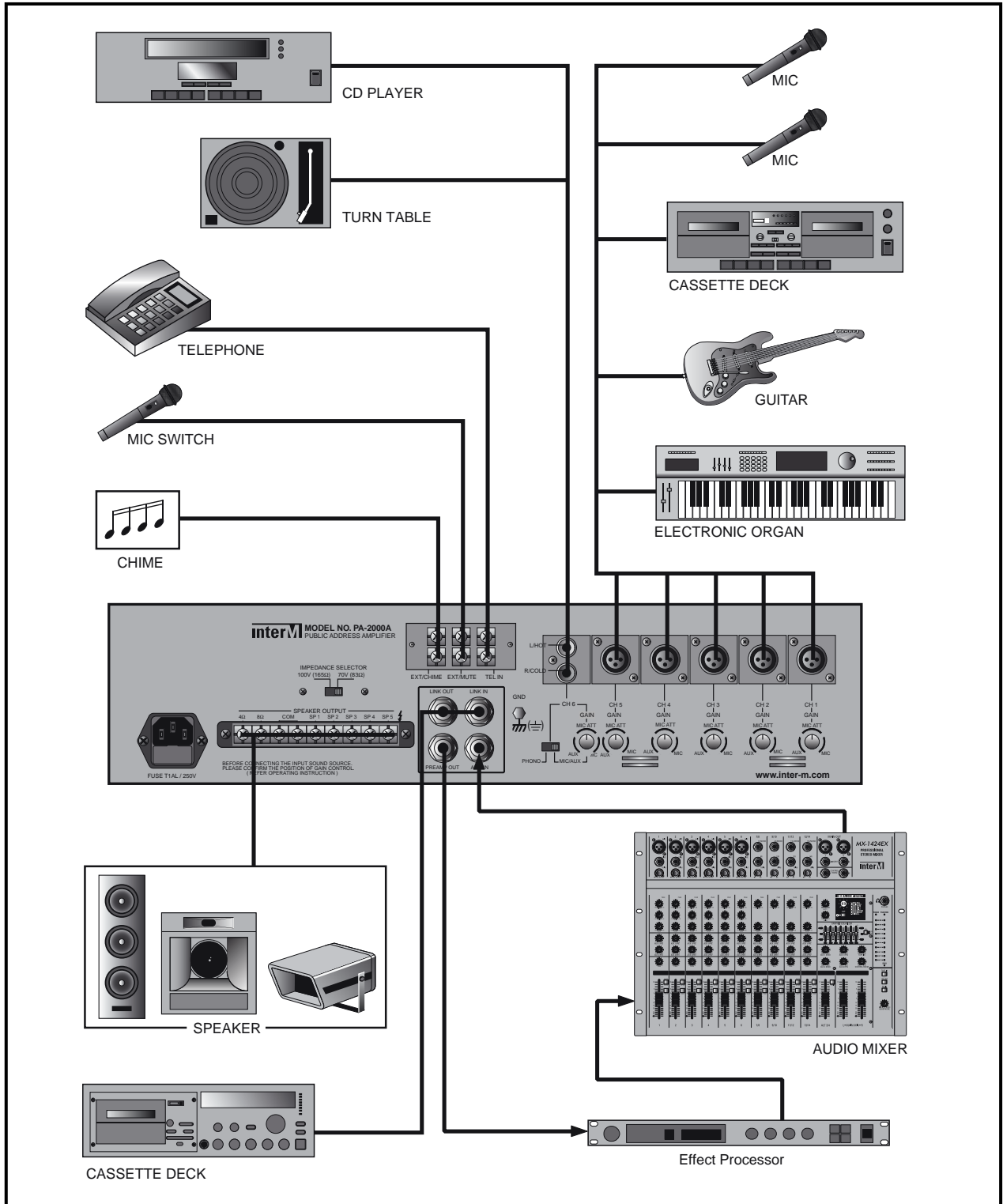
For 4Ω high-impedance speakers, connect in parallel, with the positive (+) connectors to the 4Ω terminal and the negative (-) connectors to the COM terminal. See Figure 4 below.

For 8Ω high-impedance speakers, connect in parallel, with the positive (+) connectors to the 8Ω terminal and the negative (-) connectors to the COM terminal. See Figure 5 below.

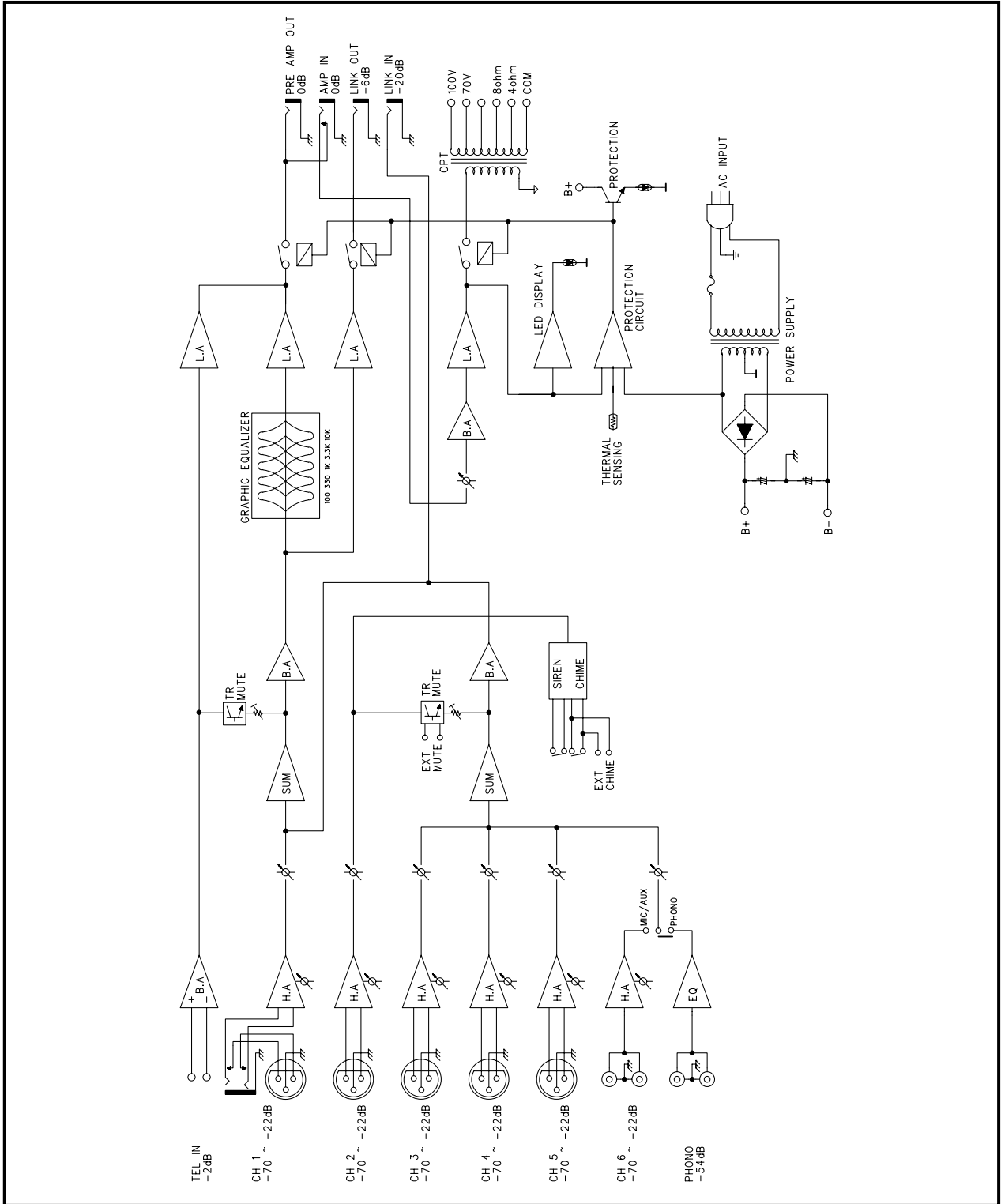
For high-impedance systems, connect with matching transformer as per Figure 6 below. Be certain that the total impedance does not equal less than the rated impedance.



Applications



Block Diagram



Specifications

- ELECTRICAL

| | |
|---|--|
| Rated Output (RMS) | PA-2000A: 60W PA-4000A: 120W |
| Frequency Response | 60Hz-20kHz |
| Total Harmonic Distortion(T.H.D) | Less than 1% |
| Signal to Noise Ratio (S/N)..... | 105dB |
| Graphic Equalizer (100Hz, 330Hz, 1kHz, 3.3kHz, 10kHz) | ±12dB |
| Input Sensitivity/Impedance | |
| CH1~CH6 | -70~-22dB/600Ω |
| Phono..... | -54dB/22kΩ |
| Link In | -20dB/15kΩ |
| Telephone In | -2dB/600Ω |
| Amp In | 0dB/47kΩ |
| Speaker Output/Impedance..... | PA-2000A: 60W: 4Ω, 8Ω, 83Ω(70V), 165Ω(100V) PA-4000A: 120W: 4Ω, 8Ω, 42Ω(70V), 83Ω(100V) |
| Amp Out/Impedance | 0dB/600Ω |
| Link Out/Impedance | -6dB/600Ω |

- GENERAL

| | |
|-------------------------|--|
| Power Source | 100-120VAC or 220-240VAC; 50/60Hz (Supplied AC mains transformer depends on country requirements) |
| Power Consumption | PA-2000A: 95W PA-4000A: 120W |
| Weight | PA-2000A: 10kg/22lb PA-4000A: 12kg/26lb |
| Dimensions | PA-2000A: 420(W)x100(H)x320(D)mm/16.5(W)x3.9(H)x12.5(D)in PA-4000A: 420(W)x133(H)x320(D)mm/16.5(W)x5.2(H)x12.5(D)in |

* Specifications and design subject to change without notice.

Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Variations and Options

Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

Options

No optional items are available for this product.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact Inter-M directly or the authorized Inter-M Distributor for your specific country or region.



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

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