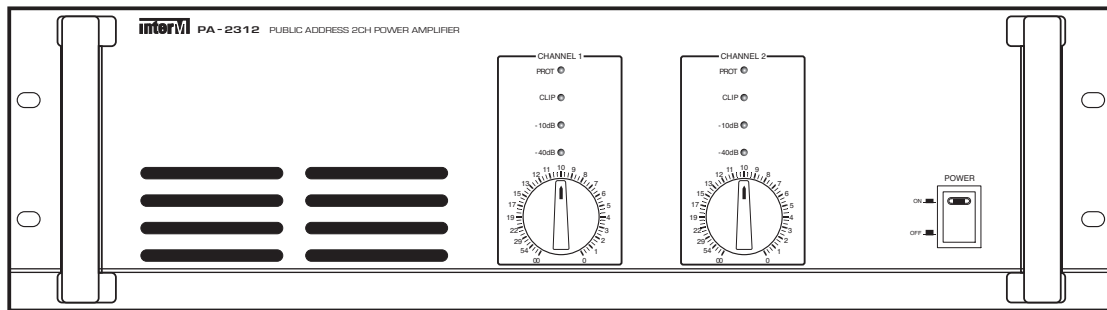


# Operation Manual

## PA-2312 Public Address 2 CH Power Amplifier



\* Rack mount products in the Western Hemisphere(North America, South America, and the Caribbean) do not have handles installed due to customer preference.

**interM**

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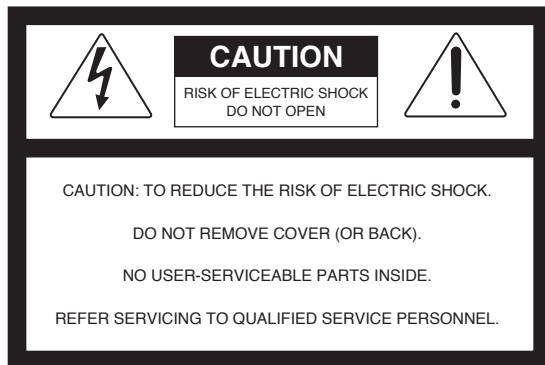
## Welcome

### 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

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-2312 Power Amplifier 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

- **HIGH POWER, LOW DISTORTION**

120W of RMS power with less than 1% THD.

- **ADVANCED PROTECTION CIRCUITRY**

Thermal and current overload protection, power-on delay and automatic idling circuitry for component and loudspeaker protection.

- **BATTERY BACKUP**

Can be powered by 24VDC battery for emergency backup and true portability.

- **SLIM DESIGN, COMPACT SIZE**

Streamlined design fits in a compact 3RU space.

### Accessories

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

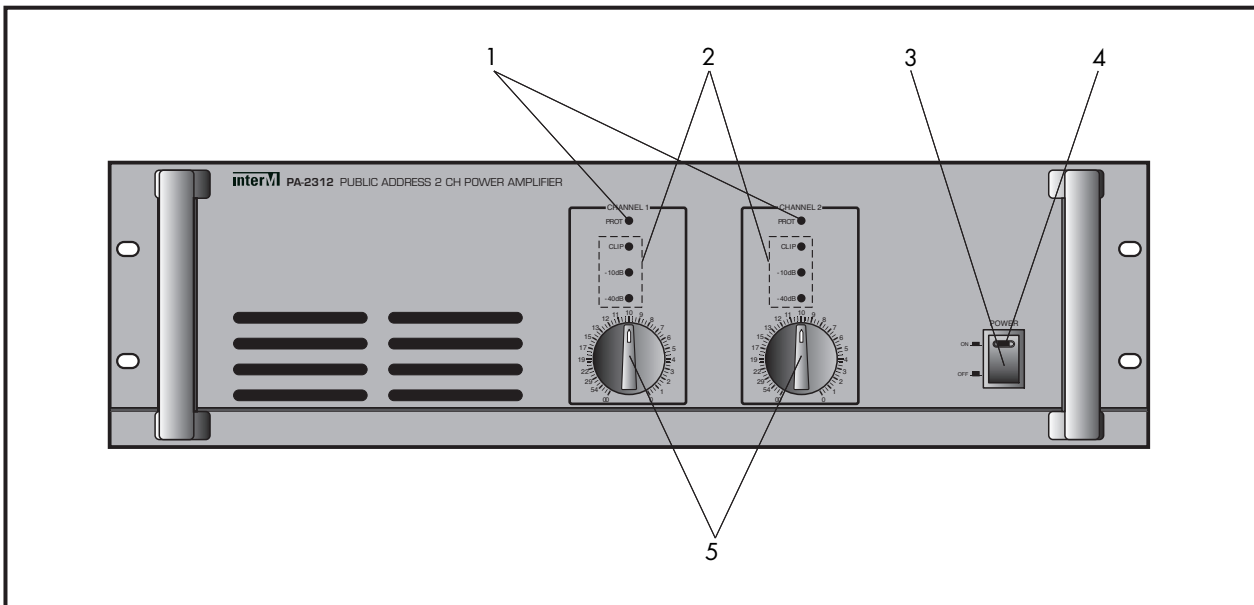
## Operation

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

Keep volume levels at minimum gain before switching on.

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

## Front Panel



### 1. 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.

Note that the Protection Indicator lights for approximately six seconds when the amplifier is first powered on.

### 2. OUTPUT LEVEL INDICATORS

These LEDs indicate the amplifier's output status, lighting when audio signal is received. The red CLIP LED indicates an excessive output level. Do not operate the unit with the CLIP LED steadily on (illuminated).

### 3. POWER SWITCH

Pushing this switch up switches the unit on. Pushing it down switches the unit off.

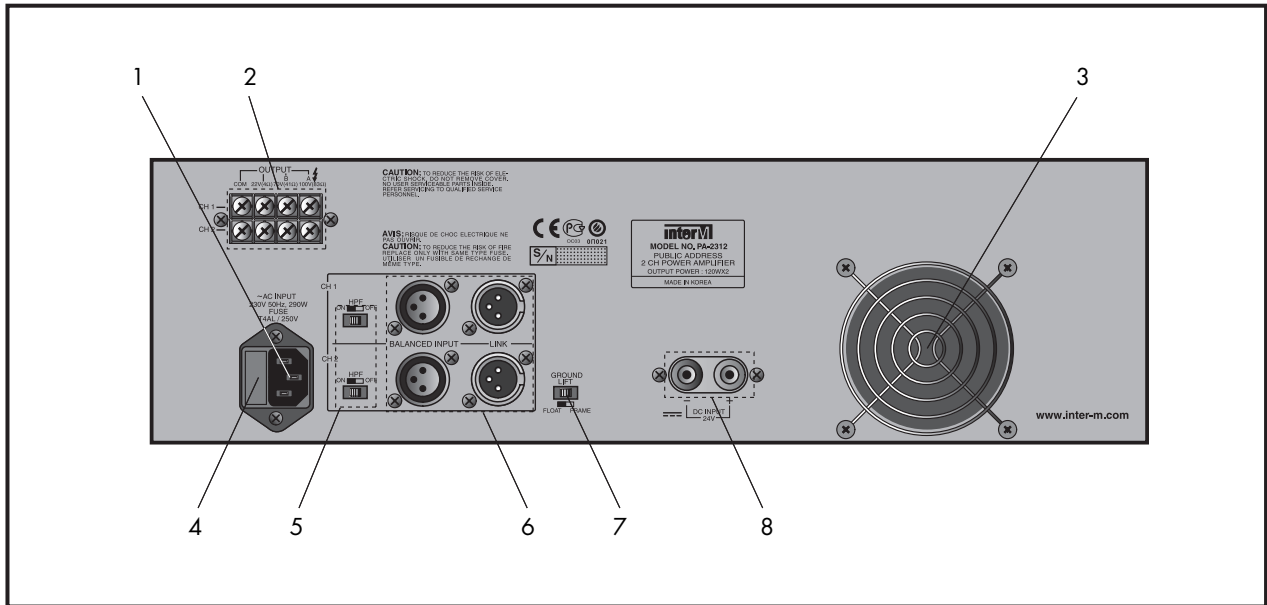
### 4. POWER LED

When the unit is powered on, the Power LED will glow steadily.

### 5. INPUT ATTENUATORS

These are controls for regulating each channel's output level. Clockwise rotation increases gain.

## Rear Panel



### 1. AC INPUT POWER

Connect the supplied standard AC input cable here.

### 2. SPEAKER OUTPUT TERMINALS

These terminals are provided for connecting speakers to the unit. Make certain the combined impedance of the speakers is equal to or higher than the rated output impedance of the amplifier.

The impedance and output voltage are as follows.

#### •USA/CANADA & Associated Version

Impedance	4Ω	5.2Ω	41Ω
Output Voltage	22V	25V	70V

#### •EC & Associated, JAPAN Version

Impedance	4Ω	41Ω	83Ω
Output Voltage	22V	70V	100V

### 3. FAN VENTS

These vents provide hot air flow out of the unit. It is important to keep them free of obstructions, to prevent the unit from overheating. It is also important to operate the unit in a dust-free environment.

### 4. AC 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.

If the fuse continues to blow, please refer servicing to qualified service personnel.

### 5. HIGH-PASS FILTER SWITCH

This switch activates the high-pass filter circuit, which reduces excessive low frequency content to protect speakers and components.

**6. AUDIO INPUTS**

Balanced input connectors are provided on both male and female XLR jacks for convenience.

**7. GROUND LIFT SWITCH**

This switch provides for connection or disconnection of the amplifier's ground to AC "earth" ground, to prevent noise from ground loops. Under most circumstances, this switch should be set to FRAME position.

**8. DC INPUT TERMINALS**

These terminals are provided for the connection of backup battery. Connect a 24VDC battery source to these terminals. Make certain the red terminal is connected to the battery's positive (+) side, and the black terminal to the battery's negative (-) side.



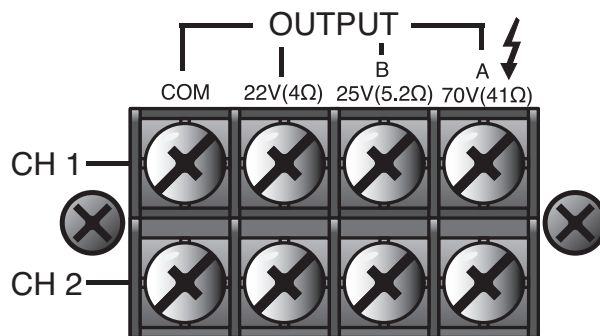
## Connecting Speakers

Before connecting speakers to your PA-2312 unit, be sure to disconnect the AC power cable. Make certain that the total impedance is not less than the rated impedance indicated.

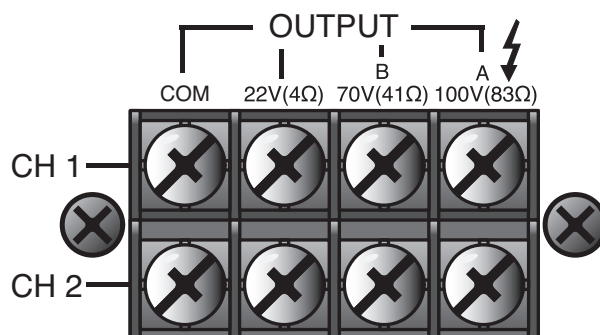
For 4Ω speakers, connect the positive (+) connector to the 22V(4Ω) terminal and the negative (-) connectors to the COM terminal.

For high-voltage distributed systems, connect with matching transformer to the COM and either 70V or 100V terminals. Be certain that the total impedance does not equal less than the rated impedance.

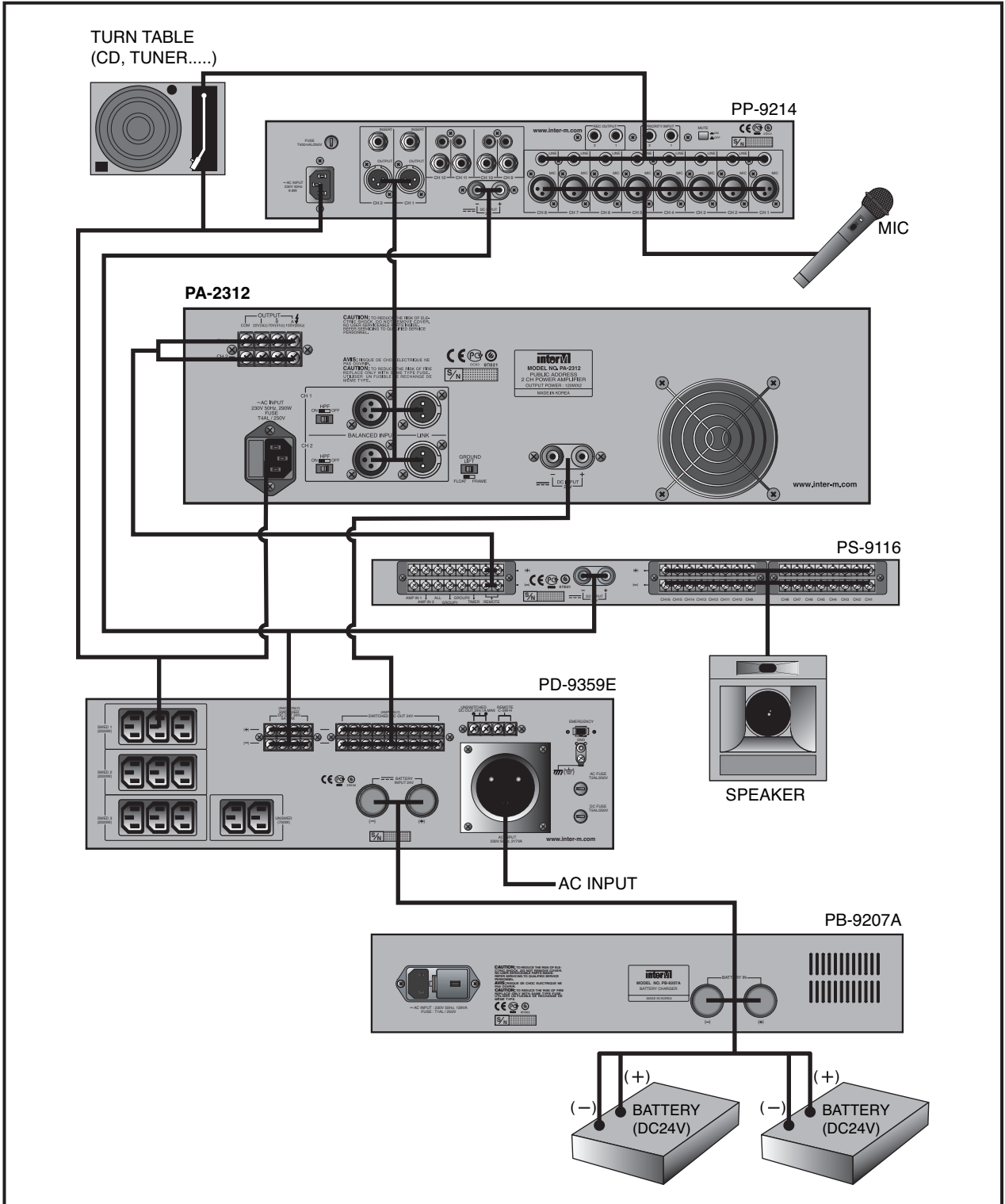
- USA/CANADA & Associated Version



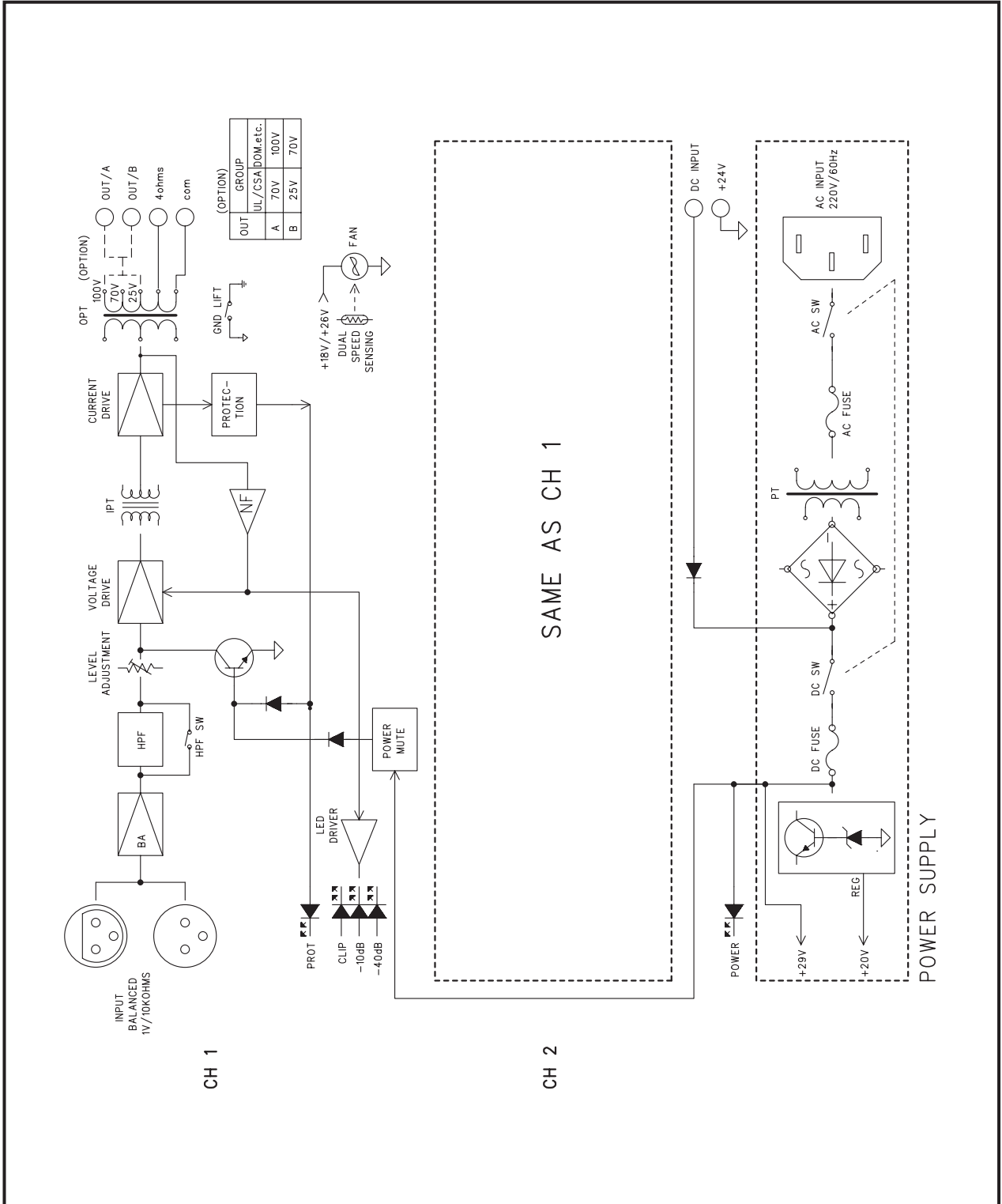
- EC & Associated, JAPAN Version



# Applications



# Block Diagram



## Specifications

### - ELECTRICAL

Rated Output (RMS, THD 1%, 1kHz) .....	120W
Input Sensitivity/Impedance .....	1V/10k $\Omega$ , Balanced
T.H.D .....	Less than 1%
S/N .....	Better than 95dB
High Pass Filter .....	-3dB at 400Hz
Channel Separation .....	Less than -70dB
Output Voltage/Impedance .....	EC, JAPAN: 4 $\Omega$ /22V, 41 $\Omega$ /70V, 83 $\Omega$ /100V USA/CANADA: 4 $\Omega$ /22V, 5.2 $\Omega$ /25V, 41 $\Omega$ /70V

### - GENERAL

Power Source .....	100-120VAC or 220-240VAC; 50/60Hz, 24VDC (Supplied AC mains transformer depends on country requirements)
Power Consumption(1/8 Power) .....	290W
Weight .....	17.9kg/39.5lb
Dimensions .....	482(W) x 132(H) x 280(D)mm/19(W) x 5.2(H) x 11(D)in

\* Specifications and design subject to change without notice.

## Service

### Procedures

Ensure the problem is not related to operator error, or system devices that are external to this unit. 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(in Korea or the USA) or the authorized Inter-M Distributor for your specific country or region.

NOTE

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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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