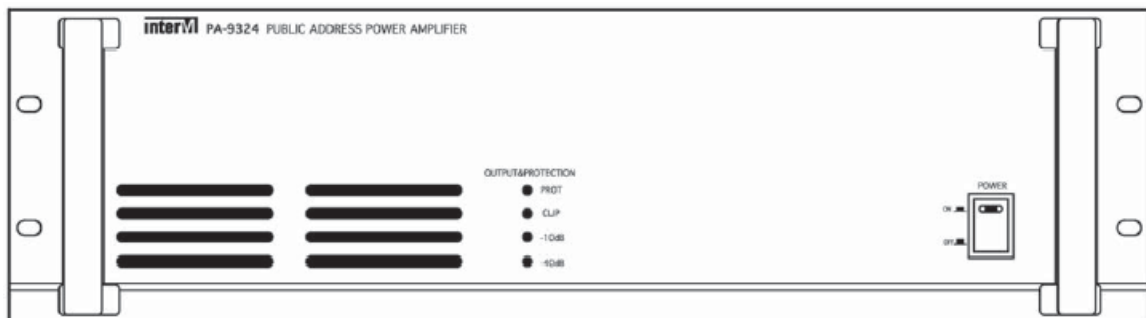


# Operating Manual

## PA-9312/PA-9324/PA-9336 Power Amplifier



©Copyright 2004 Inter-M Corporation

**interM**

## Contents

|                                  |           |
|----------------------------------|-----------|
| <b>Welcome .....</b>             | <b>3</b>  |
| <b>Unpacking .....</b>           | <b>3</b>  |
| <b>Warnings .....</b>            | <b>3</b>  |
| <b>Operation.....</b>            | <b>5</b>  |
| <b>Features .....</b>            | <b>6</b>  |
| <b>Front Panel Controls.....</b> | <b>7</b>  |
| <b>Connections.....</b>          | <b>10</b> |
| <b>Connecting Speakers.....</b>  | <b>11</b> |
| <b>Specifications.....</b>       | <b>12</b> |

---

## Welcome

---

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

Thank you for purchasing this fine Inter-M product. All of us here at Inter-M are dedicated to providing you with the highest quality products and the best value.

We sincerely trust this product will provide you with 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 a part of our worldwide extended family!

---

## Unpacking

---

Although your PA-9312/PA-9324/PA-9336 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.

---

## Warnings

---




### **Environment**

Never place this product in an environment that could alter its performance or reduce its service life. Such environments are usually characterized by high levels of heat, dust, moisture, or vibration.

### **Safety**

1. Read these instructions carefully.
2. Follow all instructions.
3. Keep all warnings.
4. Do not operate this apparatus near water.
5. Clean only with a damp cloth.
6. Do not block any of the ventilation openings.
7. Install only in accordance with the instructions in this manual.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (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 is 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 it is attached to the apparatus.
11. Use only the attachments/accessories specified.
12. Use only with a cart, stand, tripod, bracket, or table specified, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid overturning.
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.

|  |   |
|--|---|
|  <p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,<br/>DO NOT REMOVE COVER (OR BACK).<br/>NO USER-SERVICEABLE PARTS INSIDE.<br/>REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>   |  <p>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.</p> |
| <p><b>WARNING</b></p> <p>To prevent fire or shock hazard, do not expose the unit to rain or moisture.</p>  |  <p>This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.</p>  |
| <p>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.</p>   |   |
| <p>Attention: 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.</p>   |   |
| <p>*Do not install this equipment in a confined space such as a book case or similar unit.<br/>*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.<br/>*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."</p> |   |

## 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.

## **PA-9312/PA-9324/PA-9336 Public Address Power Amplifier**

---

### **Features**

---

#### **High Power, Low Distortion**

- 120W (PA-9312), 240W (PA-9324) or 360W (PA-9336) of RMS power, with less than 1% THD.

#### **Balanced Input**

- Balanced XLR inputs to reduce ground hum and increase efficiency.

#### **Gain Adjustment**

- Input gain is adjustable from -12dB to 0dB (1V) via rear panel control.

#### **Emergency Battery Backup**

- Emergency battery backup for unexpected AC power failure.

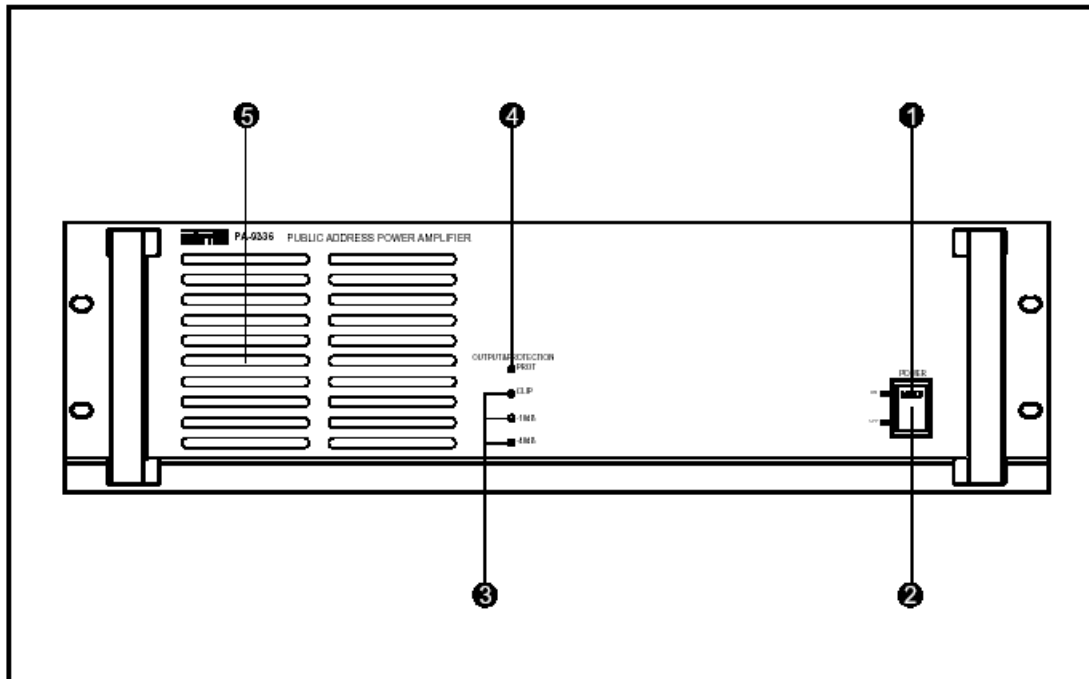
#### **Slim Design, Compact Size**

- Streamlined design fits in a compact 3RU space.

---

## Front Panel Controls

---



### 1. Power LED

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

### 2. Power Switch

Pressing this switch switches the unit on, as indicated by the Power LED (1). Pressing it again switches the unit off.

### 3. Output Level Indicators

These three LEDs indicate the amplifier's output status. The -40dB LED indicates the presence of audio signal at the amplifier's output. The -10dB LED indicates output at nominal operating range. The red CLIP LED indicates an excessive output level. Do not operate the unit with the CLIP LED constantly on (illuminated).

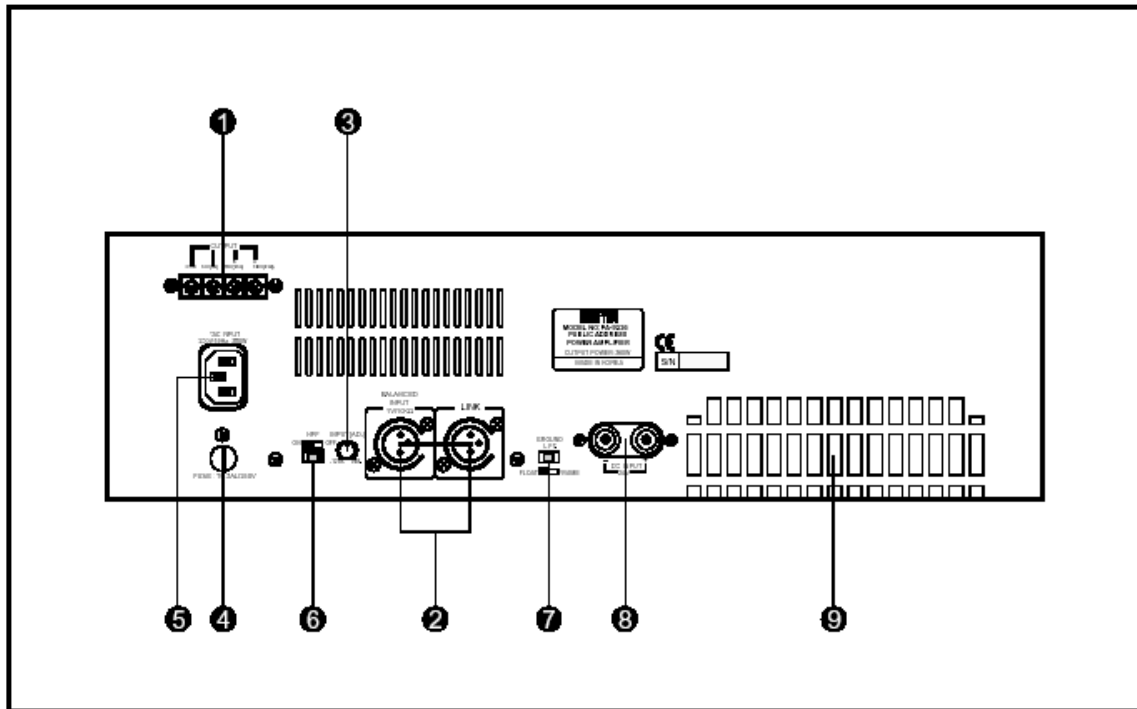
### 4. Protection Indicator

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.

### 5. Fan Vents

These vents provide cool air flow into 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.

## Rear Panel Controls



### 1. Speaker Output Terminals

These terminals are used to connect speakers to the unit. You may select either 4Ω or 8Ω conventional operation, or High Impedance operation at either 70V or 100V. Make certain the combined impedance of the speakers is equal to or higher than the rated output impedance of the amplifier.

| MODEL   | 4Ω  | 70V   | 100V  |
|---------|-----|-------|-------|
| PA-9312 | 22V | 42Ω   | 83Ω   |
| PA-9324 | 32V | 21Ω   | 42Ω   |
| PA-9336 | 38V | 13.6Ω | 27.8Ω |

### 2. Audio Inputs

These balanced XLR jacks are for the input of audio signal.

### 3. Level Control

This knob controls the amplifier's output level, from -12dB to 0dB (reference input of 0dB at 1V). Rotating the knob clockwise increases the level, and rotating it counter-clockwise decreases the level.

### 4. 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, refer servicing to a qualified service technician.

**5. AC Connector**

Connect the supplied standard AC input cable here.

**6. High-Pass Filter Switch**

This switch activates the high-pass filter circuitry, which decreases frequencies lower than 400Hz by -3dB. The high-pass filter is designed to protect speakers from damage caused by excessive low frequency transients.

**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.

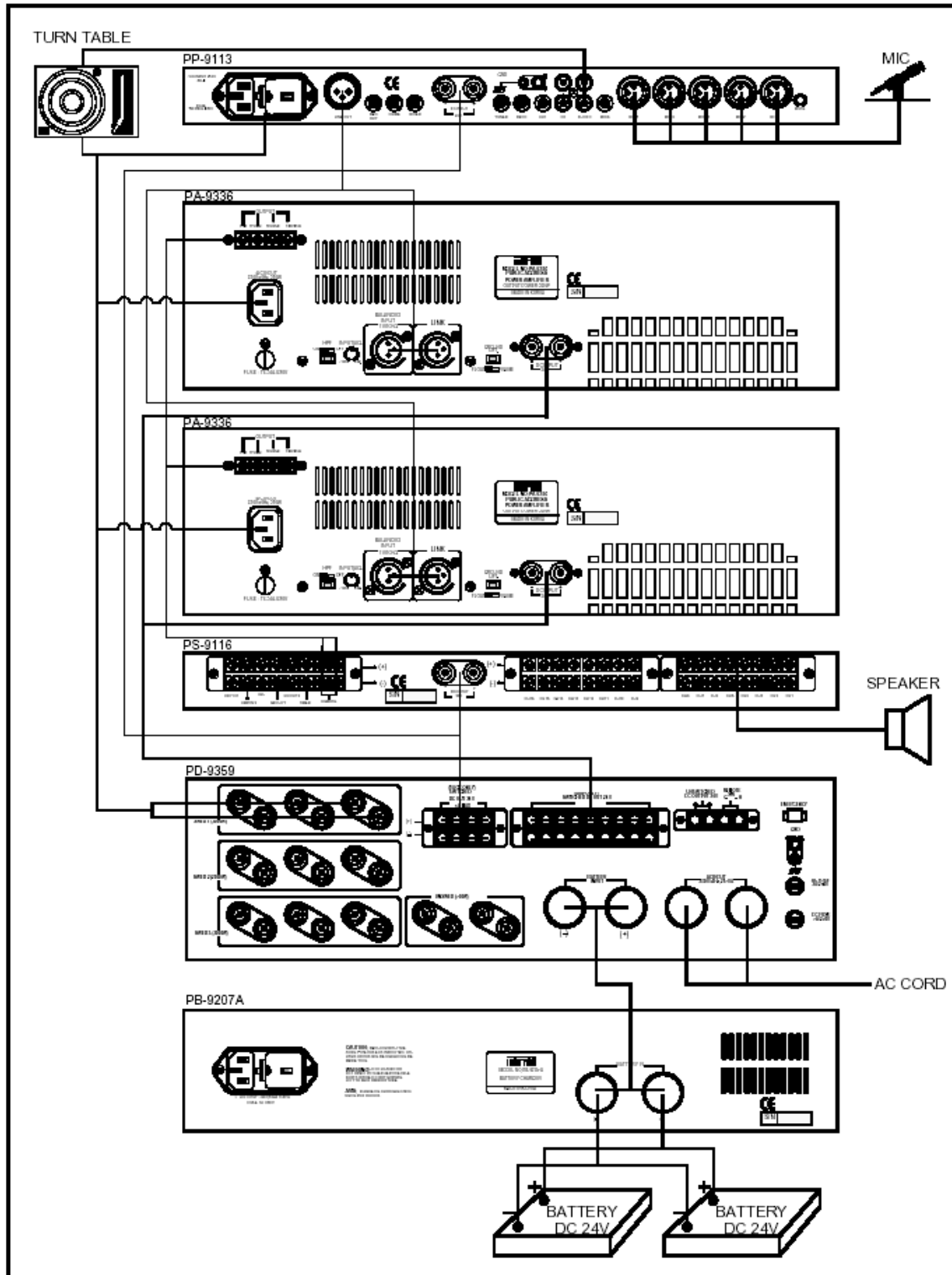
**8. DC Input Terminals**

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.

**9. 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.

# Connections



---

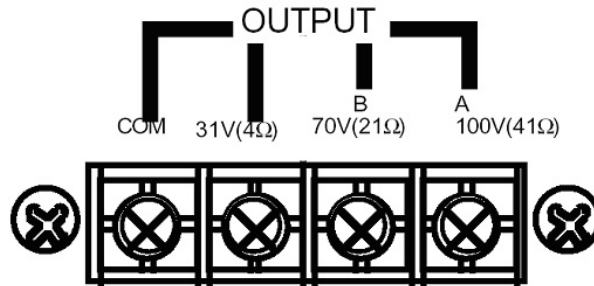
## Connecting Speakers

---

Before connecting speakers to your PA-9312/PA-9324/PA-9336 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 31V(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.



---

## Specifications

---

### ELECTRICAL

---

**Rated Output (RMS)****PA-9312: 120W**4Ω/22V; 5.2Ω/25V;  
42Ω/70V; 83Ω/100V**PA-9324: 240W**4Ω/31V; 2.6Ω/25V;  
21Ω/70V; 42Ω/100V**PA-9336: 360W**4Ω/38V; 8Ω/53V;  
13.6Ω/70V; 27.8Ω/100V**Input Sensitivity/Impedance**

1V/10kΩ

**T.H.D**

Less than 1%

**Frequency Response (+1/-3dB)**

70Hz-20kHz

**S/N**

Better than 95dB

**High Pass Filter**

-3dB at 400Hz

**Input Level Adjustment**

-12dB~0dB

---

### GENERAL

---

**Power Source**AC 110V-240V, 50/60Hz,  
DC24V**Weight****PA-9312**

14Kg (30.8 lbs)

**PA-9324**

19Kg (41.9 lbs)

**PA-9336**

21Kg (46.3 lbs)

**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 for improvements.



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.

**INTER-M AMERICAS, INC.**

1 EAST BEACON LIGHT LANE, CHESTER, PA, USA 19013-4409

TEL: (610) 874-8870, FAX: (610) 874-8890

Home Page:<http://www.inter-m.net>, E-mail: [service@inter-m.net](mailto:service@inter-m.net)

**INTER-M Corporation**

SEOUL OFFICE: 653-5 BANGHAK-DONG, DOBONG-KU, SEOUL, KOREA

TEL: 82-2-2289-8140~8, FAX: 82-2-2289-8149

Home Page:<http://www.inter-m.com>, E-mail: [export@inter-m.com](mailto:export@inter-m.com)