

# **INSTALLATION AND OPERATION MANUAL**

## **DIGITAL CLASS-D SINGLE CHANNEL AMPLIFIER**

**DA-120**

**DA-240**

**DA-350**

**DA-500**



# Important Safety Information

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 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 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.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Plug this apparatus to the proper wall outlet and make the plug to be disconnected readily operable.
17. Main plug is used as disconnected device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.
18. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
19. An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.

## Safety Warning

### WARNING!

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, FULLY INSERT.



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.

#### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN

**WARNING:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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

# Contents

<b>Front Page</b>	<b>1</b>
<b>Important Safety Information</b>	<b>2</b>
<b>Safety Warning</b>	<b>3</b>
<b>Contents</b>	<b>4</b>
<b>Introduction</b>	<b>5</b>
<b>Front Panel</b>	<b>6</b>
<b>Rear Panel</b>	<b>7</b>
<b>Speaker Connection</b>	<b>8</b>
<b>Block Diagram</b>	<b>9</b>
<b>Specification</b>	<b>10</b>
<b>Service and Warranty</b>	<b>11</b>

# Introduction

## Features:

- Switching power technology digital power amplifier
- Class-D PA power amplifier of minimum power consumption
- Less rack space and less heat generation
- Single channel power amplifier into 19" rack mount unit
- Rated power output at 120W, 250W, 350W to 500W
- Separate speaker outputs 8Ω/100V
- Balanced XLR input by phoenix connector
- Each input with separate gain control.
- Each channel with high-cut filter
- Built-in auto standby feature to save power consumption
- Separate channel indicators for protection, clip, input and output
- Complete short circuit, overload, high temp, clip and DC protection
- Wide AC input from 110V to 230V input
- DC 24V battery input at order request with additional cost

## Description:

The DA range digital class-D power amplifier is of switching power technology, which features of minimum power consumption and much higher efficiency up to 85%, moreover it helps to save installation rack space, generate less heat so as to extend its performance life span as a result.

The digital class-D amplifiers are of rated power output at 120W, 250W, 350W & 500W, so it could be used as digital public address system at minimum cost. The versatile loudspeaker outputs of both high impedance 100V & low impedance 8ohms enable it meet both PA fixed installation and Hi-fi stereo sound installation jobs.

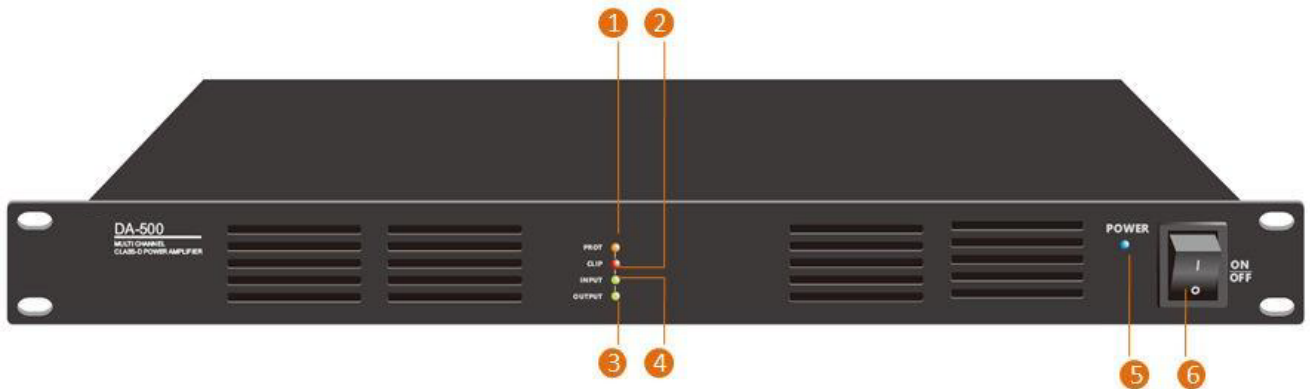
There is one balanced input by phoenix connector for each channel with gain control. The zone speaker output both by 100V & 8ohms.

The built-in high-pass filters could be enabled or disabled through the dip switch pre-setting.

Automatic standby enable after no detection of signal input for one minute, immediately wake up at sight of any input. Visual working status indicators include protection, clip, input and output for easy supervision. With complete short circuit, overload, high temp, clip and DC protection.

Wide AC power supply from 115V to 230V, thus it support worldwide sound system installation. DC24V battery input is optional at request.

# Front Panel



## 1. PROT

Protection indicator will light on in orange once the amplifier comes into protection status. The protection may be resulted from speaker line short circuit, speaker line open circuit, amplifier overload and inner working temperature over 55°C, this indicator gives visual guidance for repair and it will light off once these failures have been repaired. There are two separate protection indicators for each two channels.

## 2. CLIP

Clip indicator will light on in red once the input or output is too high. There are two separate CLIP indicators for each two channels.

## 3. INPUT

Input indicator will light on in green once there is any input signal has been detected. There are two separate input indicators for each two channels.

## 4. OUTPUT

Output indicator will light on in green once there is output signal has been passed. There are two separate output indicators for each two channels.

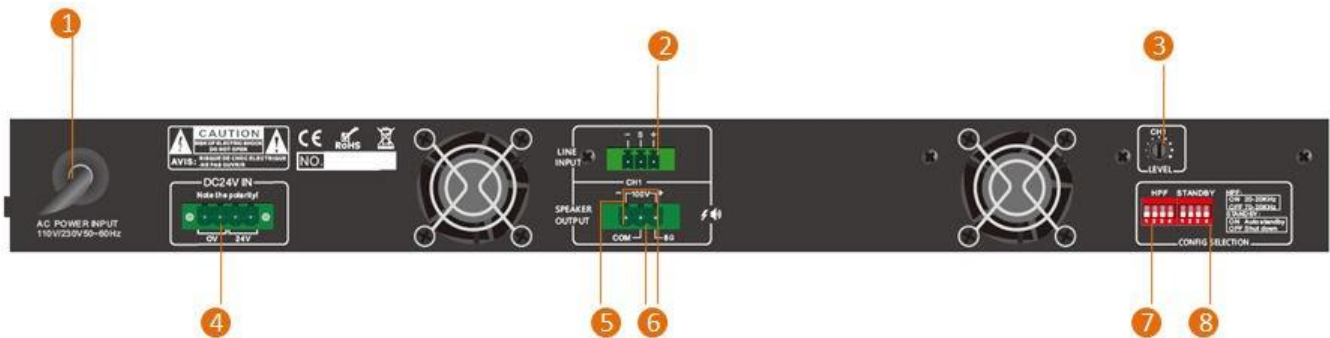
## 5. POWER

Power indicator will be light on in blue once the unit has been powered whether by AC or DC.

## 6. POWER SWITCH

Power switch used to power on and power off the equipment.

# Rear Panel



## 1. AC POWER CORD

AC power cord for input from 110V to 230V, the power cord itself is auto-switching.

## 2. LINE INPUT

The line input support both balanced or unbalanced inputs from audio sources or mixer, these input are supplied in phoenix connectors. There are two channel separate line inputs which could be managed respectively.

## 3. GAIN CONTROL

The gain control is used to adjustment the input sensitivity from various inputs so as to have the best response. There are two separate gain control for each channel.

## 4. 24V DC Input

The 24V DC input is used to connect with battery for backup power supply in case of AC fails.

## 5. 100V SPEAKER OUTPUT

The speaker outputs shall be connected to 100V line loudspeakers, the negative end to the speaker negative end and the positive end to the speaker positive end. There are two channel separate 100V speaker outputs which could be managed respectively. These speaker output are supplied in phoenix connector.

*Never mixed the negative end and the positive one, which may cause the short circuit protection.*

*Never connection the low impedance loudspeaker to these 100V ends, which may burn up the speaker or have heavy distortion.*

## 6. 8Ω SPEAKER OUTPUT

The speaker outputs shall be connected to low impedance 8Ω loudspeakers, the negative end to the speaker negative end and the positive end to the speaker positive end.

*Never mixed the negative end and the positive one, which may cause the short circuit protection.*

*Never connection the 100V line loudspeaker to these 8Ω ends, which may burn up the speaker or have heavy distortion.*

## 7. HIGH PASS FILTER

The high pass filter function will be enabled or disabled by pre-set the two channel separate dipswitch. There are two channel separate high pass filters which could be managed respectively.

## 8. AUTO-STANDBY

The Auto standby function will be enabled or disabled by pre-set the two channel separate dipswitch. The enabled auto-standby function will automatically power come into standby once no input has been detected within 2 minutes. The amplifier will immediately wake up once there is detection of input signal. There are two channel separate auto-standby dipswitch which could be managed respectively.

# Speaker Connection

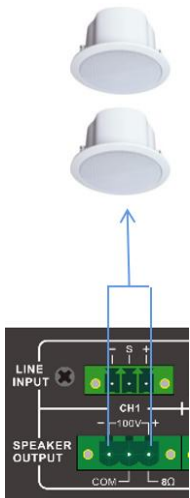
## - Connecting 8Ω Speaker Systems

When connecting conventional 8Ω speaker systems, connect the speaker's positive (+) side to the terminal labeled 8Ω. Connect the speaker's negative (-) side to the terminal labeled COM.

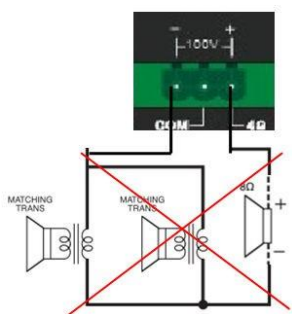


## - Connecting High-Voltage Distributed Speaker Systems

When connecting a low-impedance (100V) speaker system in parallel, connect the speaker's positive (+) side to the terminal labeled 100V. Connect the speaker's negative (-) side to the terminal labeled COM.

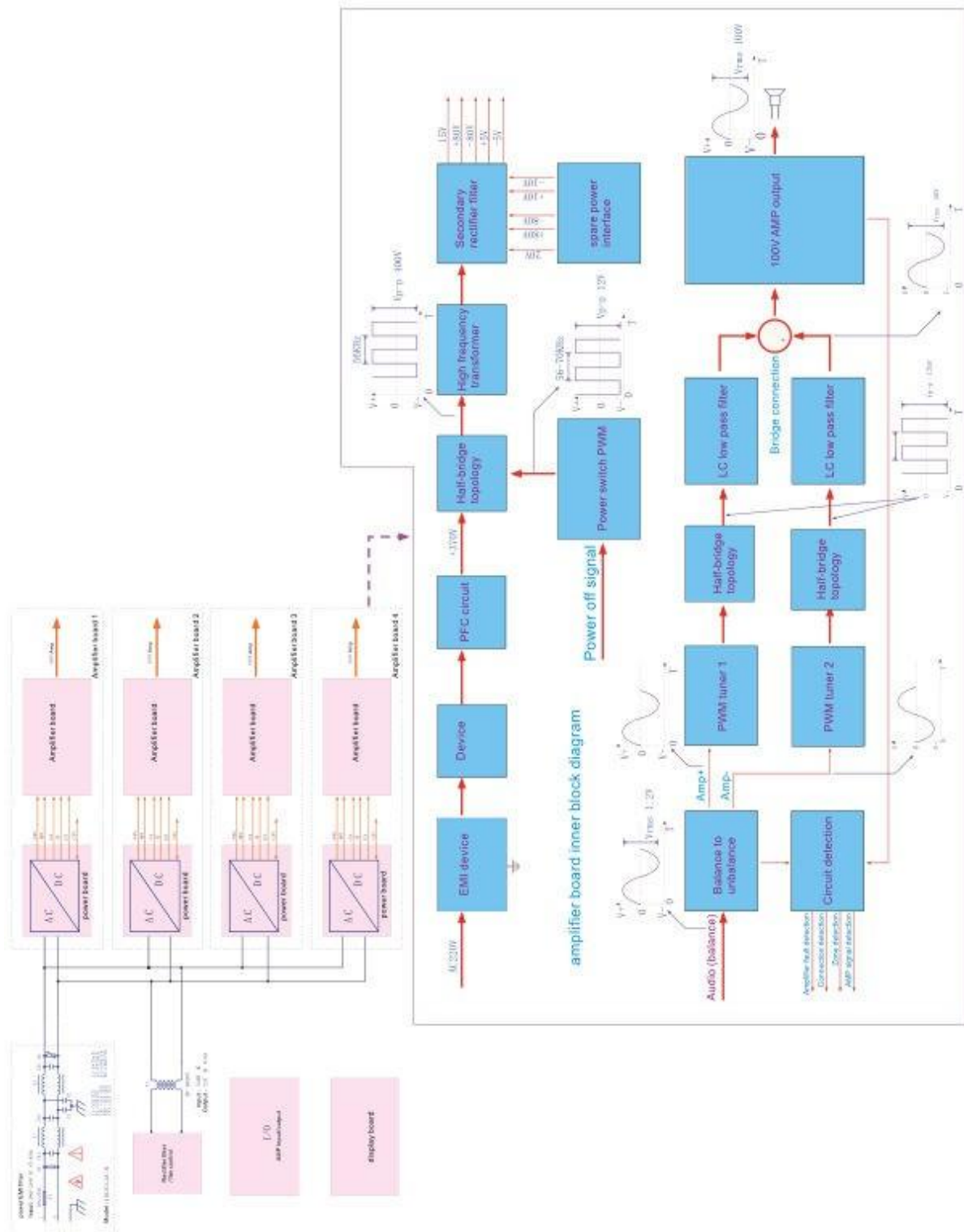


## - Wrong Connecting





# Block Diagram



# Specifications

Model	DA-120	DA-240	DA-350	DA-500
<b>Description</b>	Single Channel Class-D Power Amplifier			
<b>Rated Power Output</b>	120W	240W	350W	500W
<b>Speaker Output</b>	8Ω & 100V			
<b>Frequency Response</b>	L/H Cut OFF 20Hz-20KHz (+1/-2dB) L/H Cut ON 70Hz-10KHz (+1/-3dB)			
<b>Input</b>	0.775V, 0dBu, balanced phoenix connector by two channels			
<b>Input Impedance</b>	10KΩ			
<b>THD</b>	<0.1% (1KHz/-3dBv, 100W)			
<b>S/N Ratio</b>	>80dB			
<b>Crosstalk</b>	>60dB, 1KHz, Max output			
<b>Power Consumption</b>	180W	300W	420W	600W
<b>Power Supply</b>	Wide AC input from 110V & 230V, 50-60Hz			
<b>Dimension</b>	482(W)x420(D)x44(H) mm			
<b>Weight</b>	4.2kg	4.5kg	5.0kg	5.5kg
<b>Warranty</b>	3 years warranty and free spare parts			

## 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 of global three years. While the term and warranty may 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.

**Specifications may change without pre-notice.**