



PROFESSIONAL AUDIO

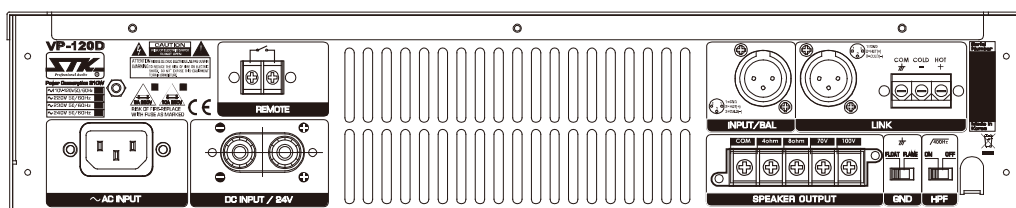
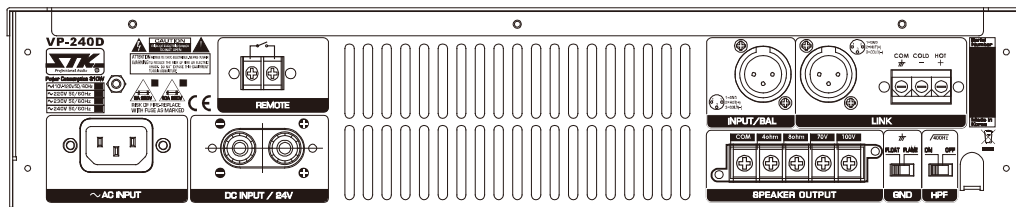
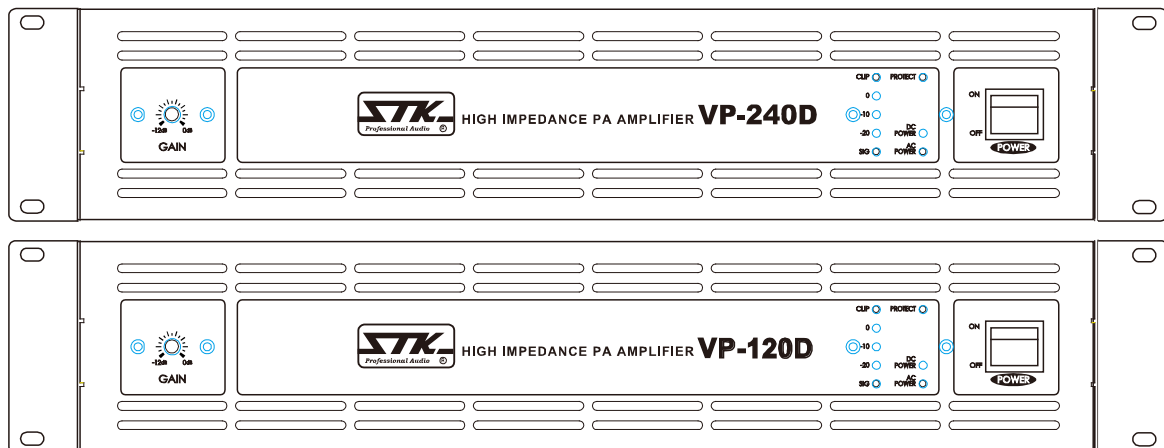
ENGINEERING AND MANUFACTURING

VP-240D/VP-120D

Public Adress Power Amplifier

OWNER'S MANUAL

ENGLISH





PROFESSIONAL AUDIO

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VP-240D/VP-120D

Public Address Power Amplifier

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Introduction

The VP-240D/VP-120D is designed to meet the special needs of sound contractors with 100V and 70V line systems. They also provide low-impedance outputs 4 ohm and 8 ohm for maximum flexibility. The power sources are 24V DC and 120V/220V/230-240V AC. The VP-240D/VP-120D manufactured in state-of-the-art production processes using oversized heat sink in 2 step Fan cooling, also the high precision-quality components such as an ultra low noise 5532 OP amplifiers and powerful 3 stage bi-polar output devices with reliable quality power filter capacitors. Amplifier's protection provided by short circuit and open circuit proof, and thermal sensing circuit, also. The power ON/OFF is controlled by main power switch and also available by remote control terminal on the rear panel with soft start and suppresses unpleasant noise when the power switch is "ON".

The VP-240D/VP-120D has attractive front panels with a full complement of LEDs to output level condition. While providing powerful, accurate and reliable performance as well as outstanding value, your STK amplifier has been designed for many years of dependable duty. Please take the time to read this manual before operation to fully realize the features and benefits of this fine product.

Important Safety Instructions

- 1. Read Instructions-** All the safety and operating instructions should be read before the appliance is operated.
- 2. Retain Instructions-** The safety and operating instructions should be read before the appliance is operated should be retained for future reference.
- 3. Heed Warnings-** All warnings on this appliance and in the operating instructions should be adhered to.
- 4. Follow Instructions-** All instructions should be followed.
- 5. Water and Moisture-** This appliance should not be used near water- for example, near a bathtub, sink, laundry tub, in a wet basement, near a swimming pool, etc.
- 6. Heat-** This appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- 7. Power Sources-** This appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance. if you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For appliances intended to operate from battery power, or other sources, refer to the operating instructions.
- 8. Polarization-** If the appliance is equipped with a polarized alternating-current line plug(a plug having one blade wider than the other), this plug will fit into the power outlet only one way. This is a safety feature. if you are unable to insert the plug fully into the outlet, try reversing the plug. if the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 9. Grounding-** If the appliance is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, this plug will only fit into a grounding-type power outlet.
This is safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
- 10. Power Cord Protection-** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- 11. Damage Requiring Service-** Unplug this appliance from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the appliance.
 - c. If the appliance has been exposed to rain or water.
 - d. If the appliance does not operate normally by following the operating Instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the appliance to its normal operation.
 - e. If the appliance has been dropped or the cabinet has been damaged.
 - f. When the appliance exhibits a distinct change in performance-this indicates a need for service.
- 12. Servicing-** Do not attempt to service this appliance yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

□ Warranty Information

UNPACKING

As a part of our system of quality control, every STK product is carefully inspected before leaving the factory to insure flawless appearance.

After unpacking, please inspect for any physical damage. Save the shipping carton and all packing materials, as they were carefully designed to reduce the possibility of transportation damage should the unit again require packing and shipping.

In the event that damage has occurred, immediately notify your dealer so that a written claim to cover the damage can be initiated with the carrier. The right to any claim against a public carrier can be forfeited if the carrier is not promptly notified and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

STK Customer Service Department

396-43 CHEONGCHEON-DONG BUPYEONG-GU
INCHEON, KOREA.

TEL : +82-(0)32-525-1788

FAX : +82-(0)32-525-1784

E-mail : stkcom@stkpro.com

www.stkpro.com

For your own protection, fill out the information below for your own records.

Model Number _____

Dealer _____

Salesman _____

Other Information

STK LIMITED 1 YEAR WARRANTY

STK electronics are warranted to be free from defects in materials and workmanship under normal use for a period of 1 year from date of original purchase.

During that period, STK will at its option, repair or replace materials at no charge if product has been delivered to STK by a STK dealer or STK Service Center together with the original sales receipt or other proof of purchase. Warranty excludes fuses, exterior finish, normal wear, failure due to abuse, or operation outside of specified ratings. Warranty applies to original purchaser only. This warranty gives you specific legal rights which vary from state to state.

For more information about warranty repair, please contact: **Customer Service Dept.,
The STK Professional Audio.**

FOR YOUR RECORDS

All of us at STK thank you for your expression of confidence in STK products. The unit you have purchased is protected by a limited 1 year warranty. To establish the warranty, be sure to fill out and mail the warranty card attached to your product.

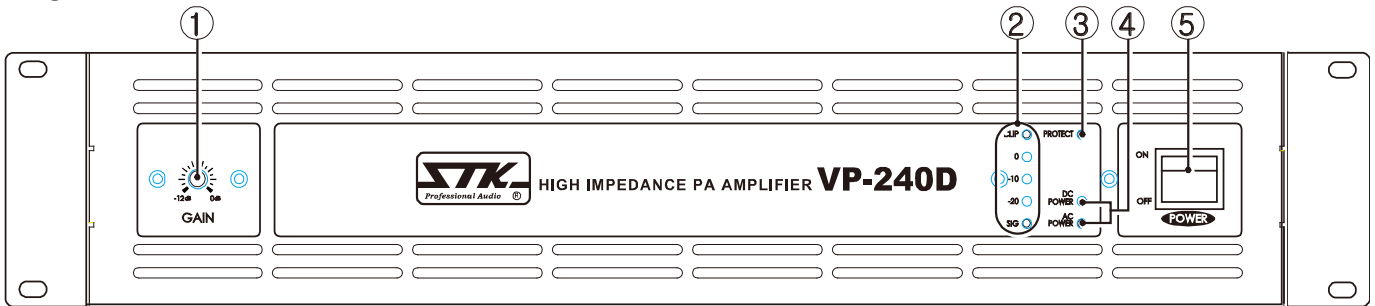
Serial Number _____

Date Of Purchase _____

Phone _____

Panel Descriptions

FRONT PANEL



1. Gain Level Attenuator

Establishes the required input level from -12dB to 0dB (0dB=0.775V).

2. Output Level Indicator

This level meter indicates the Amplifiers output level.

3. Protect LED

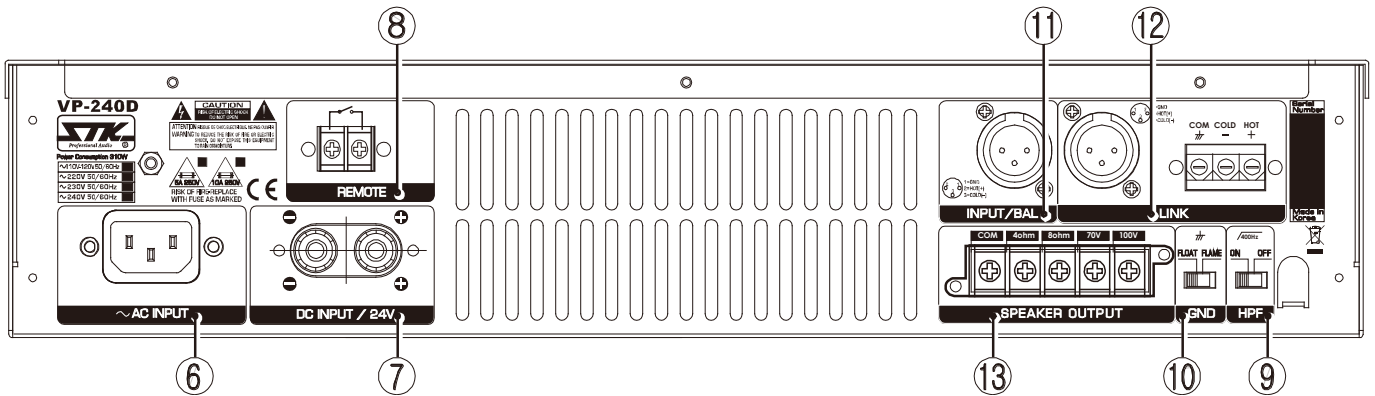
If protect conditions should occur, such as a excessively high operating temperatures with short in a output terminals cables or power on and off muting times, this LED will light and the amplifier will stop operation until the protect condition is corrected.

4. Power Indicator LED (AC AND DC)

The VP240D/VP120D has two power indicators. Red LED is turn on by AC power and Green LED is turn on by DC input power. Either LED will light when the "ON" status of the unit.

5. Power Switch

REAR PANEL



6. Power Receptacle and internal AC FUSE

This is a standard 3-prong IEC power connector. Connect the detachable line cord (included in the box) to the power receptacle, and plug the other end of the line cord into an AC outlet. Standard IEC-type power cord connection. The internal AC Fuse is equipped with 10A 250V fast-blow fuse for AC input 110Vac to 120Vac countries. Other countries are 5A 250v Time-Lag FUSE for 220Vac-240Vac.

7. DC Input Terminal and internal DC FUSE

This is a standard 5-way binding post connector. Connect the + 24V DC Battery(100A Type) source to these terminal. Red(+) connects to battery's positive(+), and Black(-) connects to battery's negative(-) side. The internal DC Fuse is equipped with 20A 35V Automotive type fuse for DC 24V input.

8. Remote Power on/off Connector.

These connectors are for external remote power on and off. The external on/off controls will be effected when the main's power switch is off position.

9. High Pass Filter Switch.

This 400Hz high pass filter activates for reduce internal resonances and protect to speakers from damage caused by excessive low frequency transients.

10.Ground Lift Switch

This switch provides connection or disconnection between AC power "earth" ground and amplifier's ground to prevent ground loops noise. Under normal circumstances, this switch is set to "Frame" position.

11.Audio Input Jacks (XLR Balanced)

These jacks connect to pre-amplifier audio outputs or mixing console outputs.

12.Link Connector (XLR and Screw Terminal)

These jacks connect to added P.A amplifiers input jacks.

13.Speaker Output Terminals

The VP240D/VP120D is utilize five screw terminal for speaker connection. One terminal is common output terminals, two terminals are 4 ohm, 8 ohm for conventional operating, and another two terminals are 70V,100V outputs for high impedance speaker operating.

Make certain the combined impedance of the speakers is less than the rated impedance. **Please refer to the specification page 10.**

V Connecting Your System

A. MOUNTING

The VP240D/VP120D is designed for standard 19" rack mounting. In addition, the amplifier provides sturdy no-skid rubber feet for secure table top or stacked operation. When rack mounting one or more amplifiers, or when mounting in combination with other equipment, be sure to allow adequate front and rear ventilation to avoid possible heat related damage to your VP240D/VP120D or other rack mounted items.

B. OPERATING PRECAUTIONS

Your STK VP240D/VP120D P.A amplifier is well protected from any external faults.

However, we recommend following these common-sense precautions:

1. Safety Instructions

Read and follow all of the safety warnings on page 3 of this manual and on the separate safety precautions page enclosed with the unit. Do not expose the VP240D/VP120D to water or other liquids.

Always unplug the unit if water is present. Failure to do so can result in injury or death from electric shock.

2. Grounding

If your power amplifier is supplied with a three conductor, grounded power cord and plug, connect the unit only to a properly grounded mains outlet. Do not use a ground lift adapter or otherwise attempt to defeat the ground on the plug. Failure to properly ground the unit can result in damage to the amplifier or other equipment connected to it and represents a dangerous safety hazard.

3. Line Voltage

Operate from AC mains not more than 5% above or below the specified line voltage. Failure to comply may invalidate your warranty.

4. Pre-Connection Caution

Always switch off the power and set all the level controls to minimum before making any connections.

This will eliminate any chance of unexpected, loud audio transients that could damage your speaker systems.

C. VP240D/VP120D OPERATION

1. Input Connections

With the power off, connect your input source lines to XLR input jack on the VP240D/VP120D

2. Connect Speaker Systems

Connect speaker systems to speaker outputs as shown figure for low and high impedance output.

The total speaker load for each terminal must be at least minimum impedance value.

3. Level Controls

With all level controls set to 0, switch the power on. Apply a nominal signal to inputs. The level of the input signal should be about as high as you will ever need it to be. This way, it will be as far above the amplifier's noise floor as possible, ensuring as excellent performance signal to noise ratio. Adjust the input level controls to achieve the desired maximum listening level or until the 0dB LED flashes momentarily during program peaks, whichever is lowest. Having set the levels in this manner will render a clean signal at any level as long as the 0dB LED are not constantly on. Remember, when the 0dB LED constantly lights, there is coming soon for distortion present in the amplifier's output section.

Connecting Your System

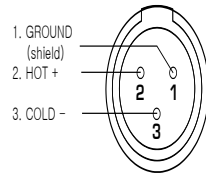
D. INPUT/OUTPUT CONNECTIONS

The STK VP240D/VP120D PA amplifier is designed to be as versatile as possible. The following descriptions of the input and output connections are designed to help you maximize the unit's potential.

1. XLR Input Jacks

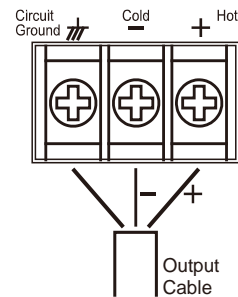
Electronically balanced inputs accept a standard XLR male connector.

Pin1=ground,
Pin2=hot or positive(+).
Pin3=cold or negative(-).



2. Barrier Strip Connector

Accept balanced line level signal by strip wire joints, the "+" terminal=Hot or Positive, "-" terminal=Cold or Negative, "⚡" =Circuit Ground.

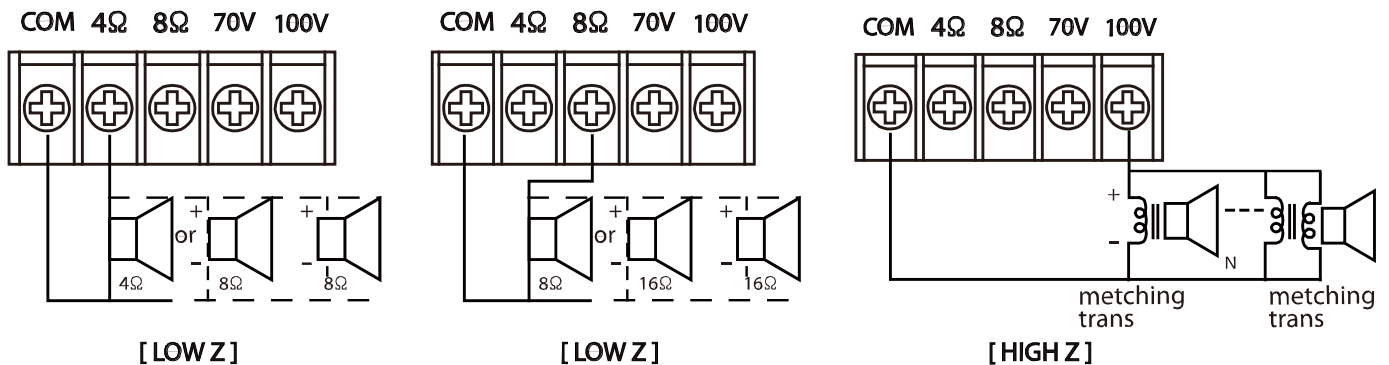


3. Speaker Outputs

Speaker connections are 5 block screw terminal connectors for Low and High impedance.

Each impedance method provides a safe and reliable connection capable of transferring high power signals if properly connected. To avoid ANY possible shock hazard, the power amplifier should be disconnected from the AC, DC power source before making any connections. When connecting your speakers using each method, be sure to pay close attention to proper polarity. Although connecting your speaker systems out of phase using the wrong polarity will not damage your speakers, it will affect the quality of sound. When using bare wire connections, be sure that your connections are "clean." If any strands of wire from one connector are allowed to touch the adjacent connector, damage to your amplifier and sound system could occur.

FIGURE : Low & High Impedance Output



Also be sure above total impedance is less than rated impedance.

NOTE

An amplifiers RMS voltage at rated output may also be determined by measuring with an RMS voltmeter or calculated using the following formula.

$$\text{FORMULA : } V(\text{RMS}) = \sqrt{Z \times P}$$

where V = RMS voltage in volts

Z = amp rated load impedance in ohms

p = Power rating in walt (RMS)

EXAMPLE 1 : Using the same 240 watt @ 4 ohms amplifier in the preceding example, substitute into the formula as follow.

$$V(\text{RMS}) = \sqrt{Z \times P}$$

$$V(\text{RMS}) = \sqrt{4 \times 240}$$

$$V(\text{RMS}) = 31$$

When rounded off, the formula indicates an RMS voltage rating of 31 volts.

EXAMPLE 2 : Using the Load impedance at 100V at 240 Watts

$$V(\text{RMS}) = \sqrt{Z \times P}$$

$$Z = V \times V / P$$

$$Z = 100^2 / 240 = 41.6 \text{ ohm (100V Terminal Minimum Load Impedance)}$$

Connecting Your System

E. POWER REQUIREMENTS

Your STK VP240D/VP120D is pre-wired at the factory for the correct line voltage(120V or 220-240V) and is furnished with the appropriate power cord and fuse. If fuse replacement is necessary, always use a fuse with the exact type and rating as specified on the specifications page of this manual or as indicated on the unit itself.

F. FRONT PANEL INDICATORS

The front panel of the VP240D/VP120D has several indicators to alert you to the status of various operating conditions. Knowing what these indicator LEDs are telling you will help you to use your STK amplifier.

1. Level Meter

A level meter for main stage indicates that your signal level supply to the power output.

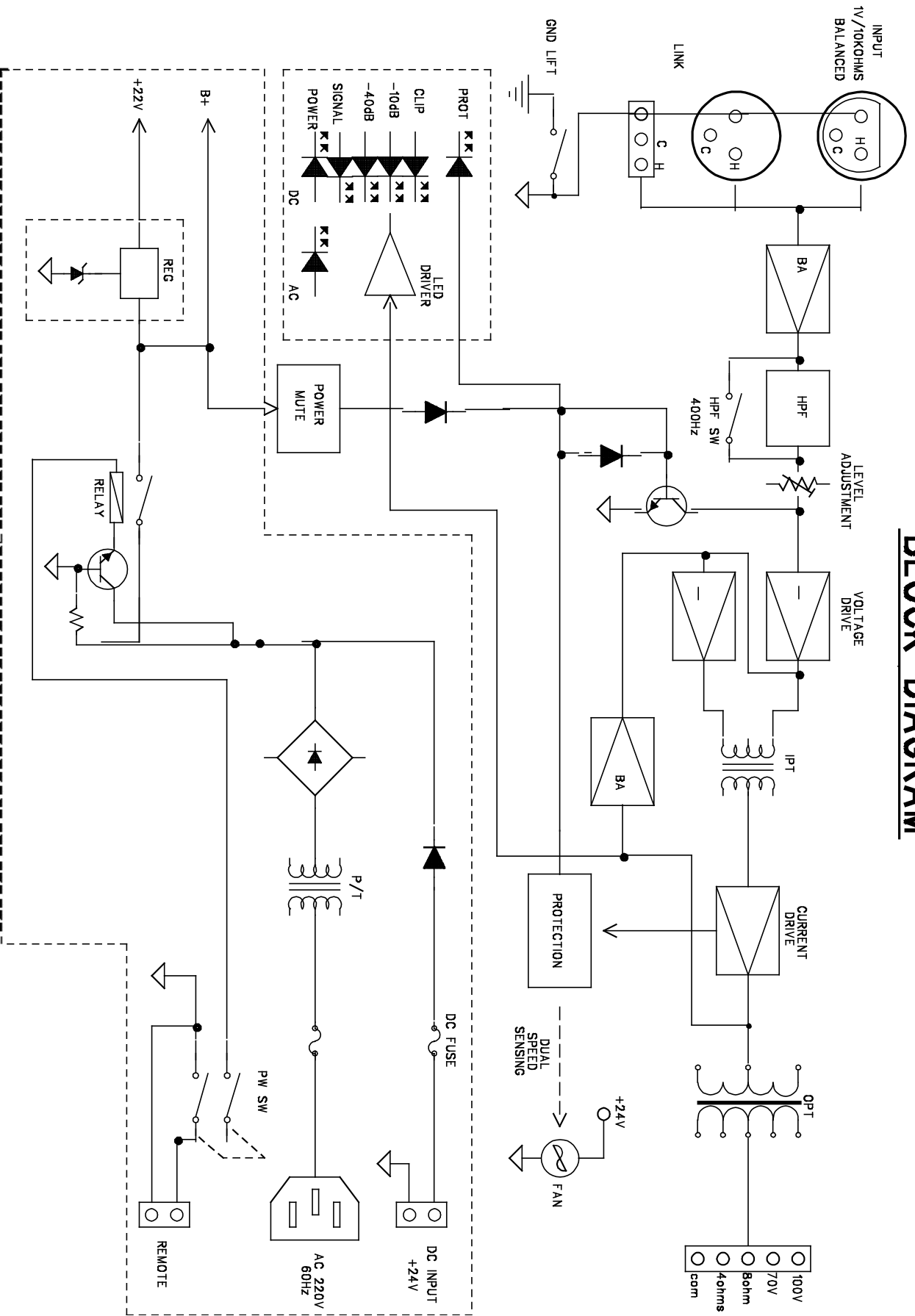
If the clip LED constantly lights during operation, most likely you will hear the results in the form of distorted sound that can be damaging to your speaker systems. In this case, reduce the signal level by lowering the input level control for the main that is clipping or reduce the level at the amplifier.

2. Power Indicator LED

The power indicator LED indicates that the power switch is in the on position and that AC or DC mains power is applied.

VI Block Diagram

BLOCK DIAGRAM



VII Specifications

Model	VP-120D	VP-240D
Output Power at 1 kHz/THD ≤ 0.5 EIA 4 ohms 8 ohms 70V 100V	120 Watt (22V) 120 Watt (31V) 41 ohms 83 ohms	240 Watt (31V) 240 Watt (43.8V) 21 ohms 42 ohms
T.H.D f=1 kHz, at 1/2 rated power	$\leq 0.5\%$	
Frequency response -3dB, 1Watt Output(HPF OFF)	70 Hz ~ 20 kHz	
Signal to Noise Ratio A-Weighted, RMS	≥ 88 dB	
Residual Noise	Less than 1mV	
Input Sensitivity	0 dB(0.775V)	
Input Impedance	≥ 10 K ohm (BALANCED)	
Cooling	2 STEP FAN COOLING	
Dimension(W x H x D)	Net: 483 x 88 x 295 mm / Shipping 400 x 550 x 190 mm	
Weight	Net	37 lbs(16.8Kg)
	Shipping	39.68 lbs(18Kg)
Power Consumption(1/3 POWER)	130Watts(VP120D)	240 Watts(VP-240D)
AC Power Requirement	AC 110- 120V(50-60Hz): Fuse 10A/250V AC220-240V(50-60Hz):Fuse 5A/250V	
DC Power Requirement	DC +24V (+24Vdc,100A BATTERY):Fuse 20A/35V Auto Motive Type	
Connector(Input/Output)	XLR Female & Male/ Screw Terminals	

Note: Specifications subject to change without notice.

*1: Protection Circuit : 1) Short Circuit

2) Current Limit

3) Thermal Shut Down

4) Power Up/Down transients

5)AC Line Fuse



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