

**NEW-HANK**

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# Digital Power Amplifier D Series Operation Manual

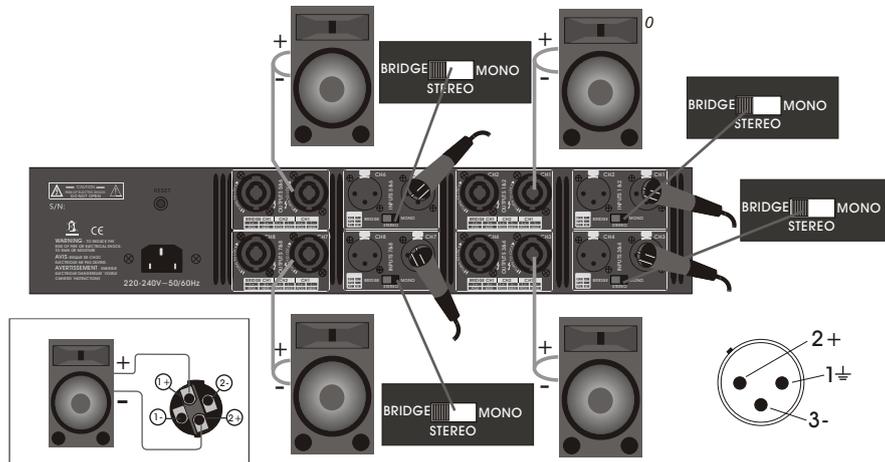
*Model: D4000*



## Bridge Wiring D4000 Bridge-Mono Wiring Using the Speakon® Connectors

Bridge-mono mode doubles the output power of the amplifier.

1. See the following figure. On the back panel, set the Output Mode switch to BRIDGE.
2. Wire the speaker to the speakon connector as shown.
3. Only the Channel 1 Gain Control works in Bridge-mono mode.



## 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 a dry cloth.
7. Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat source such as radiator, heater, register, stove, or other apparatus (including amplifier) 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 socket, consult an electrician for replacement of the correct socket.
10. Protect the power cord from being walked on, pinched, particularly at the plug, convenience receptacle, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a 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 plugs 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. Use the mains plug to disconnect the apparatus from the mains.
16. **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**
17. **WARNING: THIS APPLIANCE SHALL BE CONNECTED TO A MAINS SOCKET OUTLET WITH A PROTECTIVE EARTHING CONNECTION.**
18. **DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.**
19. **THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.**

- TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**
- TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.**

**WARNING: PAY ATTENTION TO A PROCEDURE, PRACTICE, CONDITION OR THE LIKE, IF NOT CORRECTLY PERFORMED OR ADHERED TO, COULD RESULT IN PERSONAL INJURY OR DEATH.**

**CAUTION: PAY ATTENTION TO PROCEDURE, PRACTICE, CONDITION OR THE LIKE, IF NOT CORRECTLY PERFORMED OR ADHERED TO, COULD RESULT IN DAMAGE OR DESTRUCTION TO PART OR ALL OF THE COMPONENT.**

## WATCH FOR THESE SYMBOLS:

- The lightning bolt triangle is used to alert the user to the risk of electric shock.
- The exclamation mark triangle is used to alert the user to important operating or maintenance instructions.
- CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN**
- This device is designed and evaluated under the condition of 2000 meters above sea level; and, it can be only used in locations below 2000 meters above sea level. Using the device above 2000 meters altitude would result in high safety risk.
- The device is designed and evaluated under the condition of non-tropical climate; and, it can be only used in locations in non-tropical climate areas. Using the device in tropical climate areas would result in high safety risk.

## IMPORTANT

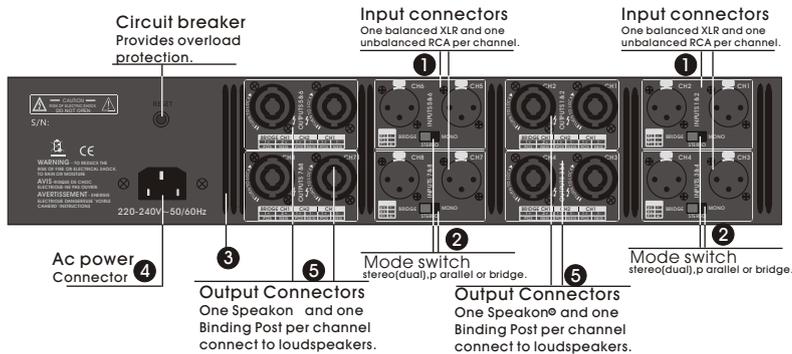
XLI series amplifiers require class 2 output wiring.

## MAGNETIC FIELD

**CAUTION!** Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.

If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the rack and the preamplifier or other sensitive equipment at the top.

## Rear Panel Introduction



### 1. Input connection

It is a balanced 3 core XLR female socket.

### 2. Status selection switch

Push the switch to the position wanted. It is MONO mode at the left, STEREO in the middle and BRIDGE at the right.

#### A) STEREO mode

STEREO is the most commonly used mode. Each channel will keep independent when it is at stereo mode. The volume control in front panel will work for relevant channel.

#### B) MONO mode

It is only the signal from CH 1 will be used under the MONO mode. The signals from all the output ends are the same and the volume control knobs will control the volume from relevant channels.

#### C) BRIDGE mode

It is only the signal from CH 1 will be used under this mode. The signals from the output ends will be the same and the phase will be contrast. All the output of the amplifier will be gathered to a output end. Since the amplifier is used as a mono equipment under the BRIDGE mode, the volume will be controlled by knob CH 1. The knob at CH 2 does not work at this mode.

Please note, any end of the output cord can not be grounded under the BRIDGE mode because two ends of the cord are output. It is allowed the minimum impedance to be twice of the one under the normal stereo or mono mode.

### 3. Cool Air Vent

It is the vent for cool air to flow into the amplifier. Pls do not block it with any stuff or place anything in the front of the vent when the amplifier is at working status.

### 4. Alternating Input socket

To be connected with suitable alternating electric power via the power cord.

## Protection Functions

Digital power amplifier D series have full protection function against short circuit, direction current, over-load, over-heat and lower voltage. The protection will help to prevent possible damage to the equipment under the extreme situation.

### 1. Protection against short circuit

The protection circuit of the amplifier will monitor the current output situation at any time in operation. When short circuit happens or when the amplifier connects to the load with lower impedance, this protection function will start to work. The output of the amplifier will close and the protection circuit will detect the situation every few seconds automatically. When the short circuit or over-current disappear, the amplifier will resume to normal work situation.

The protection to very channel will work independently. When the amplifier is under STEREO mode or MONO mode, if short circuit happens at any one of the channels, this channel will be in protected situation, but the other channels will still work normally.

When the amplifier is under BRIDGE mode, every two channels of the amplifier will be connected to be one channel. So only one channel of two channel will be found output short circuit (including grounded short circuit) or over-current. Two channel will be in short-circuit protection status.

#### NOTE :

**This amplifier is with full short-circuit protection. But long lasting short-circuit should be avoided by effort because long time short-circuit may cause over-heat to inside components of the amplifier and affect the using life of the amplifier.**

### 2. Protection against direction current and secondary audio

When the amplifier is detected to find direct voltage or large range of secondary audio (lower than 20Hz) signals at the output end, the amplifier will be in the protection status. It will prevent damage to the speaker systems. At the same time, the STATUS indicator in front of the panel will turn from green to orange.

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## Specifications

Guaranteed Minimum Power		D4000
1KHz(EIA) with 0.5% THD		
4 Ω STEREO (per channel)		8x500W
8 Ω STEREO (per channel)		8x300W
8 Ω bridge mono		4x1000W
Channel		8 channel
Performance		
Frequency Response (at 1 Watt)		20Hz-20KHz, +0/-1dB
Total harmonic Distortion (THD)		<0.2%
Power voltage		220-240V~50/60Hz
Power Consumption		2700W
Power Connector		Standard IEC connector
Output Grade (Technology Type)		Class D
Voltage Gain		40dB
Damping Factor		>300 (8 Ω), 10Hz-400Hz
S/N Ratio (20Hz-20KHz, 4 Ohms)		>100dB
Crosstalk		-65dB
Input sensitivity		0.775V
Input impedance(nominal)		
Balanced		10K ohms
Unbalanced		20K ohms
Connectors, Controls and Indicators		
Input Connectors		XLR socket ( female)
Output connectors		SPEAKON
Front Panel Controls		Power on/off switch and Volume Control
Rear Panel Controls		Output mode switch for mono, stereo or bridge selection
LED Indicators		Three LED lights for every channel. Clip/-10dB, signal and Mono/bridge/Status lights in front panel.
Cooling system		Cooling fans with variable speed
Construction		
Protection		Protection against shortcircuit, direct output current, over load, low voltage and over-heat
Ventilation		Flow-through ventilation from front to back
Dimensions (WxHxD)		483x88x357mm
Net Weight		12.6kg
Shipping Weight		15.3kg
Accessories		Operation manual 1pc, power cord plug 1pc

## PRODUCT FEATURES

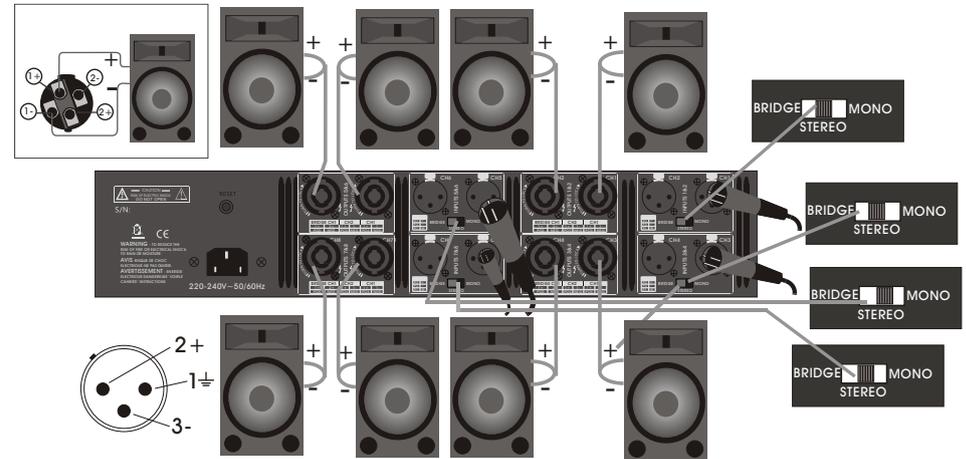
D series are the Class-D digital power amplifiers that are entirely designed by the manufacturer specially for up-rising demand to thin and light amplifier from the users. D series will bring you both satisfied sound effect and long-lasting performance.

The main features are as the following:

- Unique and elegant enclosure and front panel design.
- Carefully selected high quality components.
- Compact structure with only 1 unit height.
- Very light weight. Easy to move and install.
- Class D topology integrated with switch power supply design.
- Powerful output and high efficiency
- Low electricity consumption
- Accurate gain control, switch on/off, signal, clipping and protection LED light in front panel
- Fully automatic protection circuit at every channel, including protection against direct current , over-heat, over-load and amplitude limit.
- Nice and high efficient cooling system.
- XLR balance input and professional SPEAKON output
- Momo, Stereo or bridge mode selection pull switch is set on back panel.

## Stereo (Dual) Wiring D4000

1. See the following figure. On the backpanel, set the Output Mode Switch to STEREO.
2. Wire the speakers to the Speakon connectors as shown.

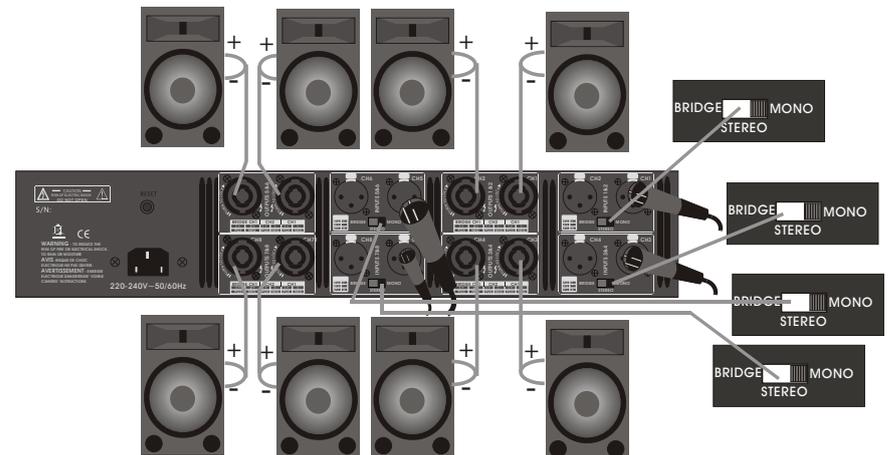


## Mono Wiring D4000

### Parallel Wiring Using the Speakon® Connectors

with this wiring, a signal sent to one of the input connectors is paralleled to both channels so that it is reproduced by both speakers.

1. See the following figure. On the backpanel, set the Output Mode Switch to MONO.
2. Wire the speakers to the Speakon® connectors as shown.



### 3. Starting delay and mute

There is a soft start procedure inside the amplifier after turn the power switch to ON position. During this time, the amplifier will be in protection status. The STATUS light will turn to orange color. The amplifier will turn to normal work status after about 4 seconds and the STATUS light will turn from orange to green. All the other indicator lights will lighten up to show the live mode.

When turn the power switch to OFF position, the amplifier will be in shut off status. The light STATUS will turn from green to orange and turn off finally.

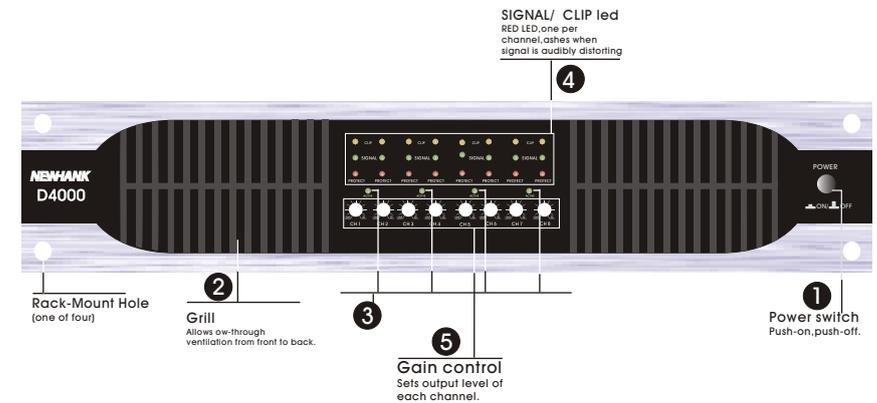
### 4. Protection against over-heat

When the temperature of the main cooling system of the amplifier is under 50 centi-degree, the cooling fan will run at very low speed. When it is between 50 and 70 centidegree, the cooling fan will run from slow speed via stepless speed change to full speed. When the temperature of the main cooling system reaches 90 centi-degree, the STATUS light will start to flash green and orange alternatively, which warns the user high temperature of the cooling system and to lower down the output intensity.

## NOTE

When the protection status happens at starting of the amplifier, it shows there maybe serious damage inside the amplifier. Pls shut off the power and take off the power cord. Then send the amplifier to the professional expert for maintenance.

## Front Panel Introduction



#### 1. Power On/Off Switch

PLS push down ON to turn on the power of the amplifier, push down OFF to turn off.

#### 2. Air Vent

It is the vent for the heated air to flow through from inside of the amplifier. Pls do not put any stuff inside or in the front of the vent to block the airflow.

#### LED Indicators

The user can know the working status of every channel with these LED indication lights. The LED lights includes three kinds of indicator as the following:

#### 3. Working mode indicators MONO and BRIDGE

When the mode selection switch in the rear panel is turned to BRIDGE or MONO, the relevant LED light in front panel will be lighten up at the same time. When it is at default working mode STEREO, these indicator lights will not shine.

#### 4. Signal indicators SIGNAL, CLIP and -10dB

Even very small output can make SIGNAL to lighten up, it shows relevant channel is at work. When the light -10dB lightens up, it shows the output level is -10dB under the rated value. When CLIP lightens up, it shows the output level is higher than the rated value and the amplifier is at protection status.

#### 5. Volume Control

The Volume Control knob is used to adjust the volume. When it is turned at clockwise direction, the volume will be increased. When it is turned at anti-clockwise direction, the volume will be decrease.

As to the 2 channel amplifier, when it is at STEREO mode or MONO mode, turn the volume control knobs at CH 1 and CH 2 to reach the wanted volume level. But when it is at BRIDGE mode, turn only the knobs at Ch1 to get the volume wanted. The knob at CH 2 does not work under BRIDGE mode.