

## SWITCHING POWER PROFESSIONAL AMPLIFIER

### LION 2-1000



**EN** OWNER'S MANUAL

## Important Safety Instructions



TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT. THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.



This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages in the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.



This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.



Protective Ground Terminal



AC mains (Alternating Current)




Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

### CAUTION

Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.
2. Keep this Manual in a safe place.
3. Be aware of all warnings reported with this symbol. 
4. Keep this Equipment away from water and moisture.
5. Clean it only with dry cloth. Do not use solvent or other chemicals.
6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufacturer's instructions.
7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electrician. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do not place heavy objects on the power. This could cause electric shock or fire.
8. Unplug this equipment when unused for long periods of time or during a storm.
9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.
10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder.

### WARNING

To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.



Dispose of this product should not be placed in municipal waste and should be separate collection.

Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment. When a cart is used, use caution when moving the cart/equipment combination to avoid possible injury from tip-over.



12. Permanent hearing loss may be caused by exposure to extremely high noise levels. The US. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level. These are shown in the following chart:

| Hours x day  | SPL | Example                     |
|--------------|-----|-----------------------------|
| 8            | 90  | Small gig                   |
| 6            | 92  | Train                       |
| 4            | 95  | Subway train                |
| 3            | 97  | High level desktop monitors |
| 2            | 100 | Classic music concert       |
| 1.5          | 102 |                             |
| 1            | 105 |                             |
| 0.5          | 110 |                             |
| 0.25 or less | 115 | Rock Concert                |

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



**CAUTION:** To reduce the risk of electric shock, do not connect the loudspeaker to a power outlet while the grille is removed.

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## Introduction

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The **LION 2-1000** switching power professional amplifier is designed for professional use on stage. The high-quality components and the carefully designed circuits ensure excellent audio performance and an extremely linear frequency response. In fact, the switching technology offers, together with an increased efficiency and a better control of heat dissipation than conventional power supply systems, a drastic reduction of dimensions and weight, for easier transportation and installation. This Amplifier guarantees total reliability and a trouble-free use even in the most demanding conditions. We believe the **LION 2-1000** switching power professional amplifier will provide a perfect performance, what you get is unprecedented performance at an incredibly attractive price.

## Features

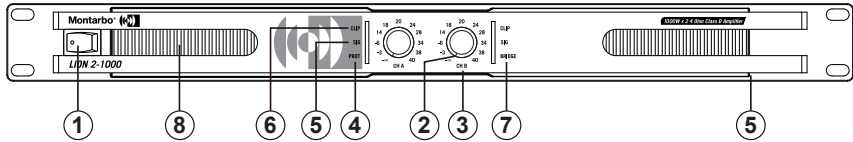
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- High current switching power allowing high power output with low noise and low distortion.
- Substantial protection circuitry like thermal, short circuit, power on/off muting and therefore protection.
- Built-in limiter.
- Balanced XLR-TRS combo input jack & XLR/Link output.
- Stereo/Parallel/Bridged/Sub/70V/100V/Mute mode select.
- Speakon output connectors.
- Front mounted gain controls for easy access.
- Signal, Clip protect, and Power LED indicators to monitor performance.

## Control Element

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### FRONT PANEL



#### 1- Power Switch

It switches ON/OFF the unit main power.

#### 2- Power LED

The Power LED lights up when the amplifier is powered on.

#### 3- Level Control

These volume controls adjust the volume level.

#### 4- Protection LED

In normal operation, the LED will not light up; if the LED lights red, it means the unit stay in protection without sound output.

#### 5- Signal LED

These green LEDs light up when the respective channel's output signal pass through.

#### 6- Clip LED

The red LED lights up when the input signal is too loud, and when the input signal decreases the LED will turn off.

#### 7- Bridged LED

The Bridged LED lights up when the amplifier is in Bridged Mode.

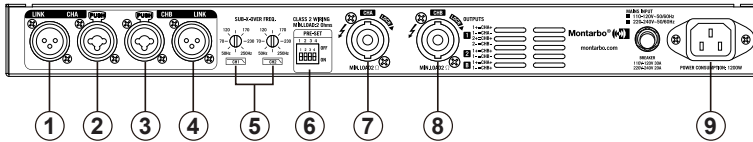
#### 8- Air Intake Vents

The Amplifier employ a variable speed internal cooling fan to intake the air through front grill to keep it running cool even under extreme operating conditions. Please keep these vents clear and free from obstruction at all times to insure proper cooling.



## Control Element

### REAR PANEL



#### 1- Channel A Link out

#### 2- Channel A XLR/TRS Input

This XLR/TRS jack will accept any balanced or unbalanced low impedance line level source by means of a three-pin XLR/TRS plug. The wiring for the plug is as follows: Pin1(Sleeve)=Ground, Pin2(TIP)=Signal+, Pin3(Ring)=Signal-.

#### 3- Channel B TRS/XLR Input

This XLR/TRS jack will accept any balanced or unbalanced low impedance line level source by means of a three-pin XLR/TRS plug. The wiring for the plug is as follows: Pin1(Sleeve)=Ground, Pin2(TIP)=Signal+, Pin3(Ring)=Signal-.

#### 4- Channel B Link out

#### 5- SUB-X-OVER FREQ

Cut off frequency selectors for low-pass (SUB) filters, the value can be set from 50Hz to 250Hz.

X-OVER FREQ is available in Mode 4(SUB-Stereo) and Mode 5(SUB-Bridged) only.

#### 6- MODE

Mode 1: CHA/CHB stereo

Input and output channels are independent.

Mode 2: CHA/CHB parallel

Outputs are the same with any channel input.

Mode 3: CHA/CHB Brided

Input the signal to Channel A, connect the speaker's "+" to the output 1+, connect speaker's '-' to the output 2+.

Mode 4: CHA/CHB sub-Stereo

CHA and CHB are stereo, output signal is low frequency, X-over FREQ  
CHA/CHB is available.

## Control Element

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Mode 5: CHA/CHB sub-Bridged

CHA/CHB are Bridged, input the signal to CHA, output signal is Bridged, X-OVER FREQ CHA is available.

Mode 6: 70V-Stereo

CHA and CHB are stereo 70V line output, the min load is 4Ω.

Mode 7: 100V-Bridged

CHA and CHB are Bridged, input the signal to CHA, output signal is 100V Bridged, the min load is 4Ω.

Mode 8: NC

Not used

Mode 9: Mute

The amplifier will be muted by turning on the switch.

| Preset |     |     |     | Mode         |
|--------|-----|-----|-----|--------------|
| 1      | 2   | 3   | 4   |              |
| OFF    | OFF | OFF | OFF | STEREO       |
| ON     | OFF | OFF | OFF | PARALLEL     |
| OFF    | ON  | OFF | OFF | BRIDGED      |
| ON     | ON  | OFF | OFF | SUB-STEREO   |
| OFF    | OFF | ON  | OFF | SUB-BRIDGED  |
| ON     | OFF | ON  | OFF | 70V-STEREO   |
| OFF    | ON  | ON  | OFF | 100V-BRIDGED |
| ON     | ON  | ON  | OFF | NC           |
|        |     |     | ON  | Mute         |

### 7- CHA SPEAKON NL-4R

Connect the amplifier to you speaker with these speaker jacks.

### 8- CHB SPEAKON NL-4R

Connect the amplifier to you speaker with these speaker jacks.

### 9- AC Input

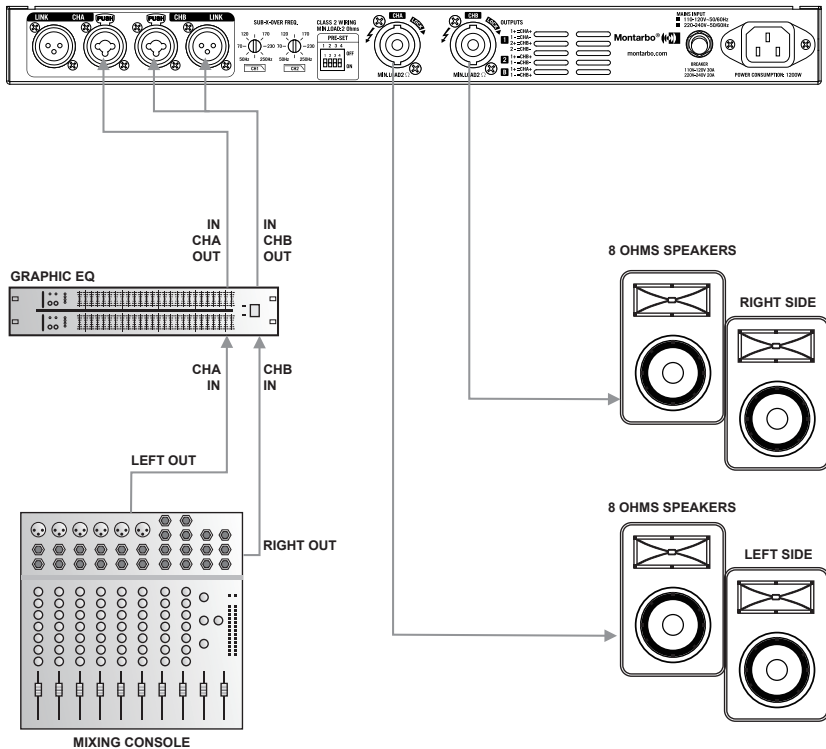
Use it to connect your Amplifier to the supplied AC cord.

## Applications

### Stereo Operation

The **LION 2-1000** Amplifier can be used in the stereo mode as two separate 1000 watt units, each capable of driving loads down to 4 ohms. Each channel operates independently and has its own input connectors, sensitivity level controls, signal indicator LEDs, automatic limiter, fault protection circuitry, power amp, and speaker outputs. In the stereo mode, the signal smart switch must be set to the stereo position. One application of the stereo mode uses one channel of the amplifier for the left house speakers and the other channel for the right. The mixing board channels can be panned left or right according to the position of the instruments on the stage. This approach provides a more accurate reproduction of the live performance.

### SWITCH SET TO STEREO



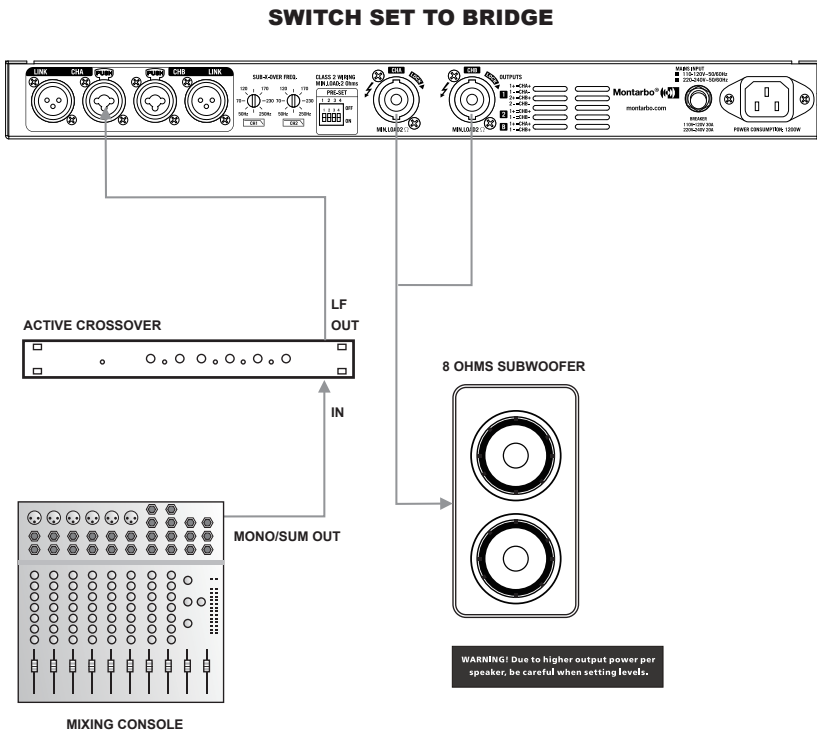


## Applications

### Mono Bridge Operation

The two internal power amplifiers (CHA and CHB) can be bridged together to form a single, higher powered amp. This is especially useful when using the amplifier to power a subwoofer. In the mono mode, the amplifier uses the Channel A input jacks and sensitivity control (Channel B's are disabled).

When operation in this mode, each channel is independently protected. The signal smart switch must be set to the bridge position and the minimum speaker load impedance must be 4 ohms.

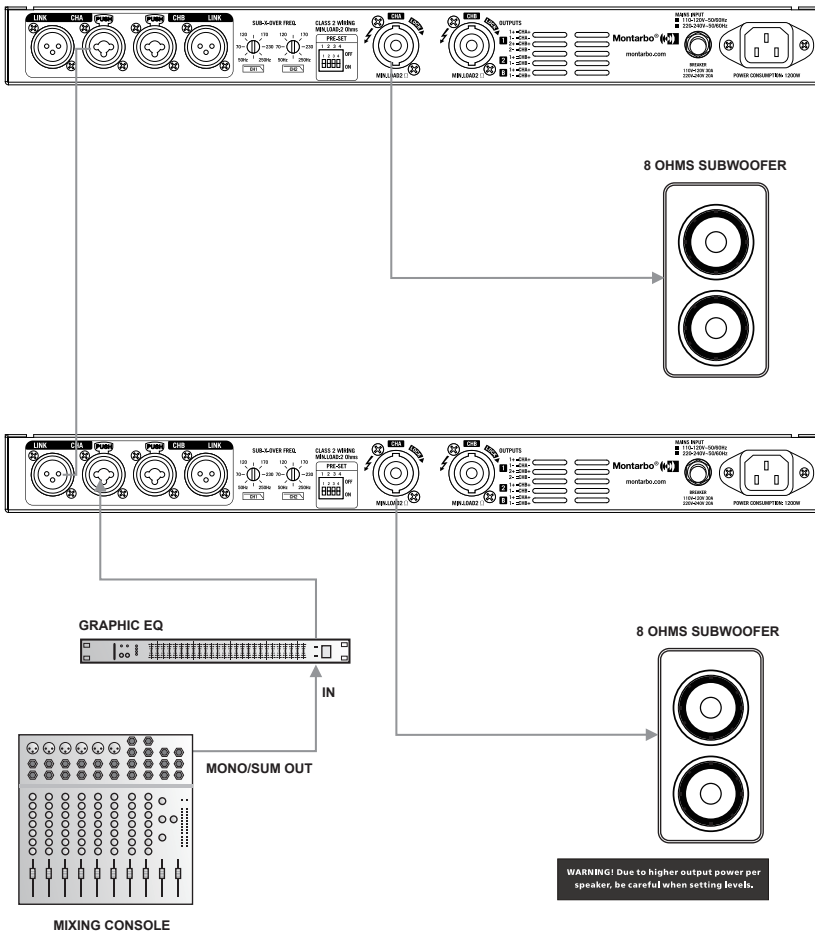


## Applications

### Patching two bridge mono mode system

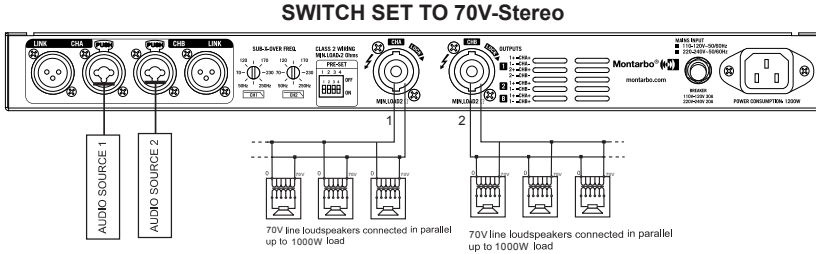
Two bridge mono amplifiers can be patched together (operated in mono mode) with connecting signal cable between their input jacks. The signal smart switch must be set to the bridge position.

#### SWITCH SET TO BRIDGE

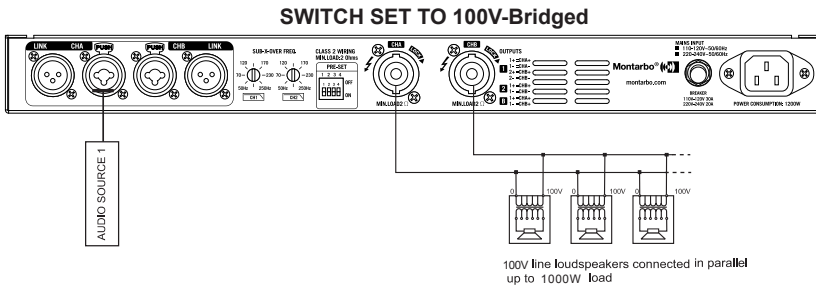


## Applications

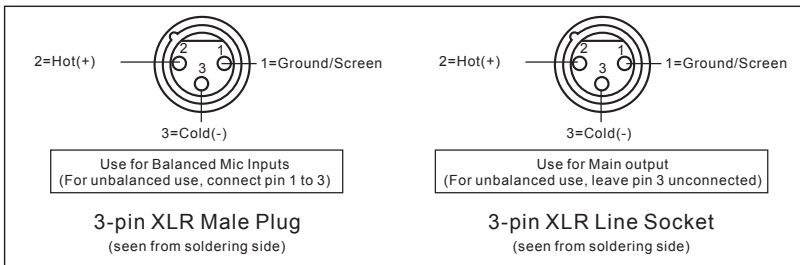
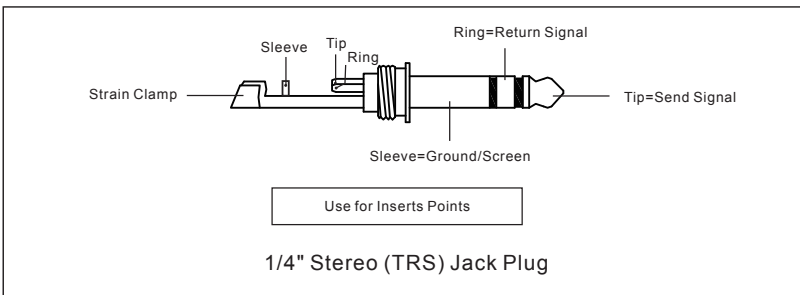
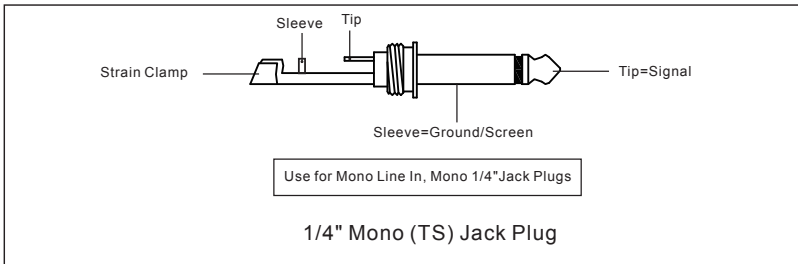
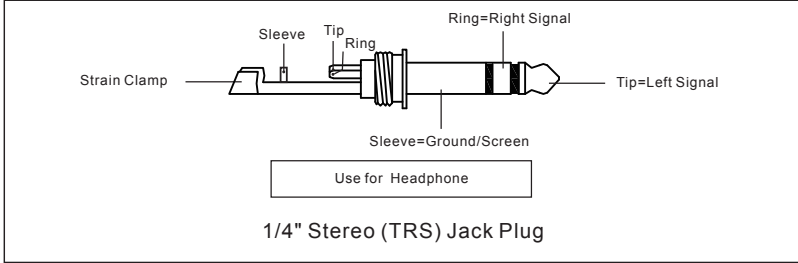
### 70V-Stereo Operation



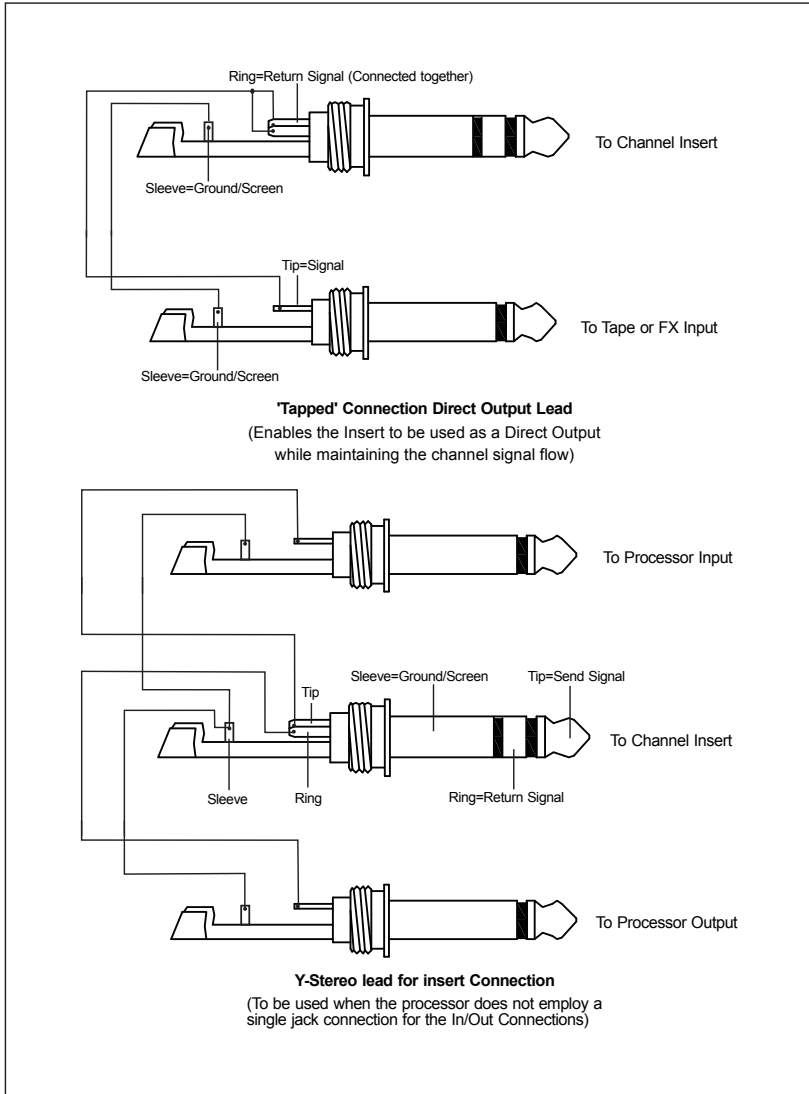
### 100V-Bridged Operation



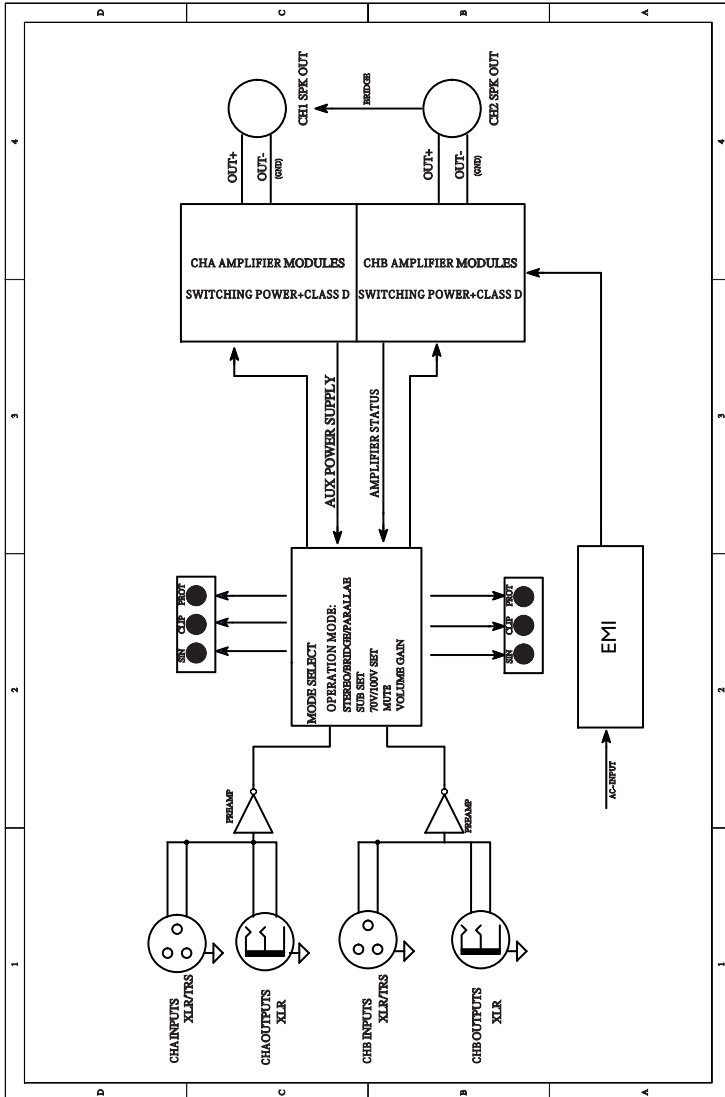
## Wiring Connections



## Wiring Connections



## Block Diagram



## Technical Specifications

|   |  |   |
|---|--|---|
| Power Specifications(tolerance +/-5%)                     |  | LION 2-1000                                 |
| Stereo Mode<br>(Both Channels Drive)                      | 2 ohms (EIAJ)  | 2000W x 2                                   |
|   | 4 ohms (RMS)   | 900W x 2                                    |
|   | 8 ohms (RMS)   | 600W x 2                                    |
| Bridge Mono Mode  | 8 ohms (RMS)   | 1800W                                       |
|   | 4 ohms (EIAJ)  | 4000W                                       |
| Electrical Specification                                  |  |   |
| Input Sensitivity (Limit Off)                             |  | 0.9-1.1V(0+/-1dBv)                          |
| Input Impedance   |  | 20k ohms balanced or<br>10k ohms unbalanced |
| Frequency Response<br>(at 10dB Rated Output Power 8 ohms) |  | 20Hz ~ 20KHz(+0/-1dB)                       |
| Voltage Gain  |  | 37+/-0.5dB                                  |
| THD+N<br>(Ref.1K 1/8 Rated Power,A-Weighted)              |  | <0.1%                                       |
| S/N rate<br>(Ref. Rated Power, A-Weighted)                |  | >100dB                                      |
| Crosstalk (Below Rated Power)                             |  | >70dB                                       |
| Damping Factor(1K 8 ohms)                                 |  | >200  |
| Power/Output Circuitry                                    |  | Switching Power<br>Class D                  |
| General Specifications                                    |  |   |
| Protections   | Full short circuit, open circuit, thermal, ultrasonic, and RF protection stable into reactive or mismatched loads, turn ON/OFF, muting, tried crowbar. |   |
| Controls  | Front: AC switch, Input level control for each channel<br>Rear: Mode selector,Cut off frequency selectors  |   |
| Indicators  | SIGNAL: 2 green LED      CLIP: 2 red LED      POWER: 1 Green LED<br>PROTECTION: red LED      Bridged:1 red LED   |   |
| Connectors  | INPUT : Neutrik combo XLR/TRS<br>OUTPUT: Speakon jacks   |   |
| Power Supply  | 110V-120V or 220V-240V AC 50/60 Hz ±10%  |   |
| Dimensions(mm)  | 483(W)*360(D)*44(H)  |   |
| Weight  | 5.7kg  |   |

*EN The information contained in this manual have been carefully drawn up and checked. However no responsibility will be assumed for any incorrectness. This manual cannot cover all the possible contingencies which may arise during the product installation and use. Should further information be desired, please contact us or our local distributor. Elettronica Montarbo srl can not be considered responsible for damages which may be caused to people and things when using this product. Specifications and features are subject to change without prior notice.*