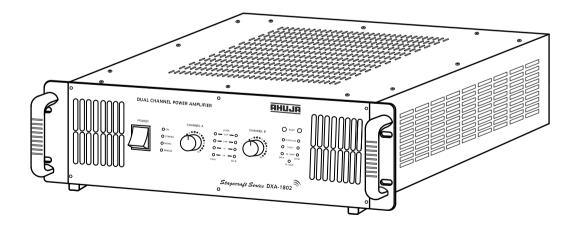


# Dual Channel Power Amplifier

900W + 900W RMS

# **DXA-1802**



- ◆ Thank you for purchasing the AHUJA Direct Coupled Amplifier.
- Please read this manual thoroughly before making connections and turning on the power.
   Following the instructions in this manual will enable you to obtain optimum performance from your new AHUJA Direct Coupled Amplifier.
- Please retain this manual for future reference.

# Safety Instructions

**Read the Instructions:** Please read all the instructions in this section carefully before installation or use of the product. All the safety instructions must be followed.

Retain the Instructions: Please retain this Instruction Manual for future reference.



This symbol, wherever it appears, alerts you to the presence of uninsulated hazardous voltage that may be sufficient to constitute a risk of electric shock. External wiring to any terminal marked with this symbol must be done by a trained and instructed person only.



This symbol, wherever it appears adjacent to a component, alerts you that the concerned component can only be replaced by another of the exact same specifications.

#### **WARNING**

- To reduce the risk of electric shock, do not remove the top cover. No user serviceable parts inside. Refer all servicing to qualified personnel only.
- Before replacing any fuse, make sure the set is switched off and disconnected from the AC mains or any other power source. Replace a fuse only with another of exactly same specification.

#### **CAUTIONS**

**Water & Moisture:** To reduce the risk of fire or electrical shock, do not expose this set to rain or moisture. Do not use this set near water or in a wet location. Do not keep any object filled with liquid, such as a vase, on top of this set. Do not insert or remove the AC mains plug with wet hands.

**Power Source:** The voltage & frequency of the AC mains supply, to which this set can be connected, is marked on the rear panel of the set. Do not connect this set to any power source other than those specified on the rear panel.

**Power Cord Protection:** Do not cut, kink, damage or modify the AC power cord supplied with this set. Keep the AC power cord away from heaters and harmful chemicals. Do not keep any heavy object on the power cord.

**Operation on Generator:** When operating this set on a generator, make sure the set is switched off till the generator voltage has stabilized.

**Ventilation:** This set should be situated so that its location or position does not interfere with its proper ventilation. Do not cover the ventilation holes / slots. Do not insert or drop anything into the ventilation holes / slots.

**Stability:** This set must be kept in a stable and flat horizontal position, and never in a tilted position. Do not place this set on an unstable stand, tripod, bracket or mount. Do not use attachments which are not supplied or explicitly recommended by the manufacturer.

**Cover Strip:** The cover strip of the audio output terminal strip, must be replaced after making connections. Failure to do so may result in exposure to hazardous voltages.

**Earthing:** This set must be earthed properly before use. A wire from the Earth terminal on the rear panel must be connected to electrical earth.

**Cleaning:** Disconnect this equipment from the AC mains and external battery before cleaning. Clean with a damp cloth, but do not allow any liquid to enter the set. Do not clean with liquids or aerosols.

**Exposure to Heat:** Do not touch the heatsinks while the set is working.

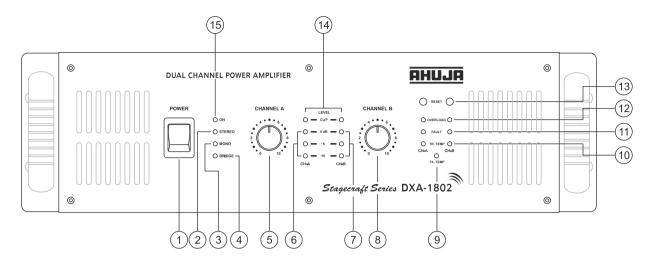
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# Features/General Description of Product

- Rugged & 19" rack mountable design of chassis.
- High current torroidal transformer which provides excellent regulation and minimised hum & noise.
- Low THD and high damping factor for excellent sound quality.
- Extensive protection circuitry for Temperature (transistor and transformer), Overload, Over voltage, DC, RFI and Output short circuit. The amplifier is fully protected for variations in AC supply due to Genset / Mains fluctuation even above 300V.
- Indicator LEDs for Signal, Mode Selection, Clip, Temperature (output devices and transformer), Fault & Overload conditions.
- Output termination on Dual Connectors (Speakon 4-way & Heavy duty screw terminals) for each channels.
- Limiter circuit protects the amplifier and speaker from being over driven because of high input level signal.
- Balanced / Unbalanced input signal through parallel XLR and 6.3mm (1/4") stereo phone jack in both channels.
- Slide switch selection of Mono / Stereo / Bridge Mode provided at rear panel.

# Front Panel Controls & Features



#### 1. POWER Switch

Push the top part of the knob to switch the amplifier ON. Push the bottom part of the knob to switch the amplifier OFF.

# 2. STEREO Mode LED

This LED lights up to indicate the unit is working in STEREO mode.

#### 3. MONO Mode LED

This LED lights up to indicate the unit is working in MONO mode.

### 4. BRIDGE Mode LED

Indicates that the unit is working in BRIDGE mode.

### 5. Volume Control for Channel A

When used in Stereo mode, it adjusts the volume level of channel A. While in Bridge or Mono mode, it adjusts the volume level of both the channels A & B.

### 6. Level Indicator LEDs for Channel A

Indicates the output levels in the step of -16dB, -6dB & 0dB levels (when unit is operated at 4 ohm load, 0dB LED is adjusted for approximately 500 Watts)

# 7. Level Indicator LEDs for Channel B

Indicates the output levels in the step of -16dB, -6dB & 0dB levels (when unit is operated at 4 ohm load, 0dB LED is adjusted for approximately 500 Watts)

# 8. Volume Control for Channel B

To be used only in Stereo mode for adjusting the volume level of channel B.

# 9. Transformer Temperature Indicator LEDs

Glowing of this LED indicates excessive temperature of the power transformer. The built-in

circuitry mutes the input signal. The amplifier will remain at mute status till power transformer is cool down below 130° C.

# 10. Transistor Temperature Indicator LEDs

One separate yellow LED provided for each of the two channels A & B. Glowing of these LEDs indicates excessive temperature of the output devices. The special circuitry then mutes the input signals. The amplifier will remain at mute status, till the devices cools down to normal temperature.

### 11. FAULT Indicator LEDs

One separate red LED provided for each of the two channels A & B. Glowing of these LEDs indicates that some fault has occurred in the respective channel.

### 12. OVERLOAD Indicator LEDs

One separate red LED provided for each of the two channels A & B. These LEDs glow when the output is shorted, in case of DC offset, the input is over driven or output is overloaded.

### 13. RESET Buttons

One separate RESET button provided for each of the two channels A & B. Rectify the cause of overload and then press the RESET button to restore the normal operation of the amplifier.

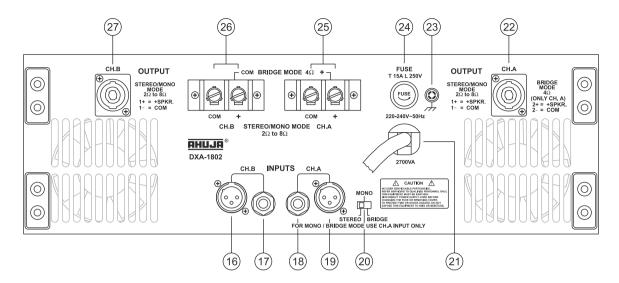
# 14. CLIP Level LEDs

One separate red LED provided for each of the two channels A & B. Continuous glow of LEDs indicates that there is excessive signal being fed to the input of the amplifier resulting in clipped and distorted output levels.

### 15. Power LED

This LED glows when the amplifier is switched ON

# Rear Panel Controls & Features



#### 16. XLR INPUT for Channel B

This XLR connector takes the balanced / unbalanced signals for driving channel B. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

# 17. 6.3 mm (1/4") Jack Input for Channel B

The stereo jack connector accepts the balanced / unbalanced signals to drive the channel B. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

# 18. 6.3 mm (1/4") Jack Input for Channel A

The stereo jack connector accepts the balanced / unbalanced signals to drive the channel A when used in stereo mode and channel A & B when used in mono and bridge mode operation. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

# 19. XLR INPUT for Channel A

This XLR connector takes the balanced / unbalanced signals to drive the channel A in stereo mode and channel A & B if used in mono and bridge mode operations. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

# 20. STEREO / MONO / BRIDGE Selector Switch

This slide switch is used to operate the unit in stereo, mono or bridge mode.

### 21. 3 Core AC Mains Cable with Plug

#### 22. Speakon Connector for Channel A Output

In STEREO / MONO mode amplified signal is available at Pin 1+ & 1- of speakon connector. The output speakon connectors should be wired as per fig. 3 (Output Connectors for Stereo / Mono Mode). In BRIDGE mode the output is taken from Pin 2+ and 2- of speakon connector. Output speakon connectors to be wired as per fig. 4 (Output Connections for Bridge Mode).

#### 23. Earth Terminal

# 24. AC Mains Fuse (Rating 15AMP T 15A L 250V)

This protects the amplifier from any excessive current flow.

# 25. Output Terminal for Channel A

This output terminal is in parallel to Pin 1+ & 1- of speakon connector for channel A and may be used when speakon plugs are not available.

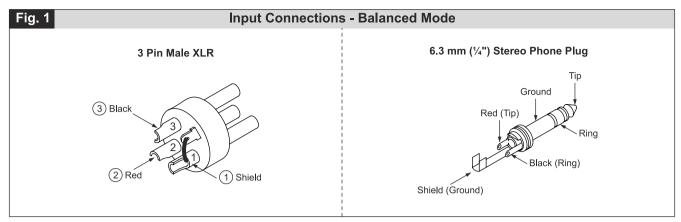
**Note:** For 2 ohm / 4 ohm load as well as BRIDGE applications, it is recommended to **use speakon connectors only**. If however terminal strips are to be used for BRIDGE mode then connect the positive (+) of the speaker to the positive (+) of terminal strip for channel A and the negative (-) of the speaker to the positive (+) of terminal strip for channel B.

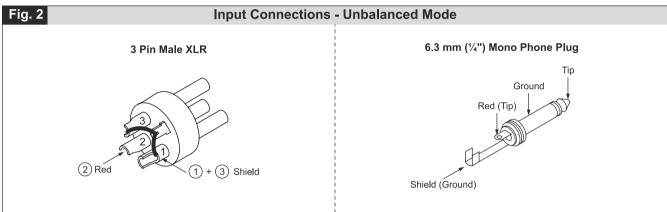
# 26. Output Terminal for Channel B

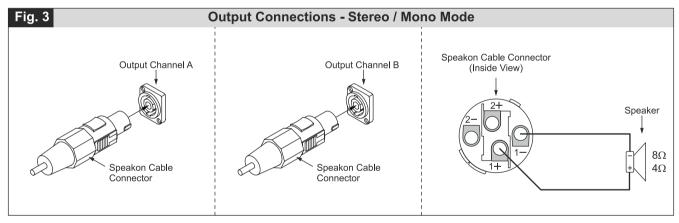
This output terminal is parallel to Pin 1+ & 1- of speakon connector for channel B.

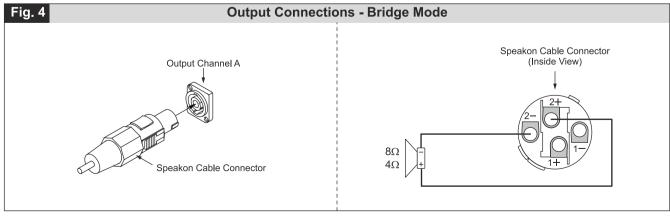
# 27. Speakon Connector for Channel B Output Amplified signal is available at Pin 1+ & 1- of speakon connector. The output speakon connectors should be wired as per fig. 3 (Output Connectors for Stereo / Mono Mode).

# • Input - Output Connections



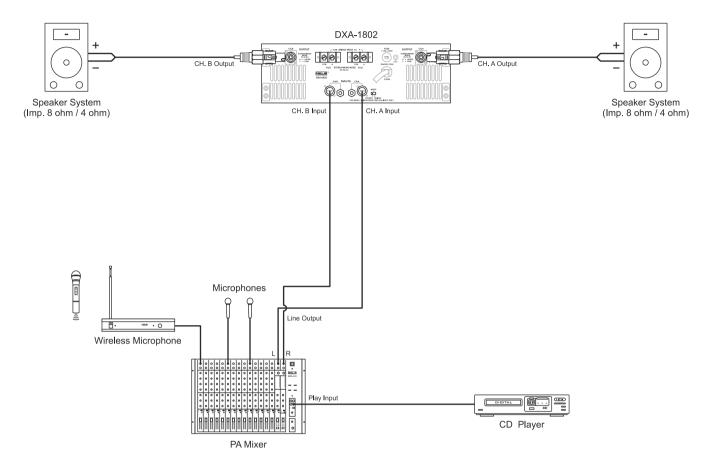






# Setup & Operations

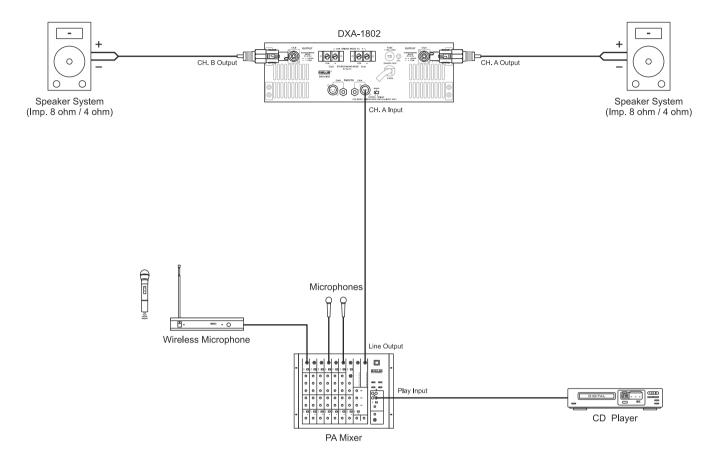
# **Stereo Mode Configuration**



In STEREO mode, both channels A & B are fully independent of each other. The balanced / unbalanced inputs can be connected either to a stereo signal source or two independent mono signal sources. Each channel can separately drive loudspeaker loads of 8 ohm or 4 ohm.

- Connect the Left and Right outputs of a mixer to channel A and B inputs of the amplifier respectively. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).
- Connect a speaker system (8 ohm / 4 ohm) on the output terminal of each channel. It is recommended to use the speakon connectors and wire these as per fig. 3 (Output Connections for Stereo / Mono Mode).
- To select STEREO mode, keep the slide switch, provided at rear panel, in STEREO position and ensure that the stereo LED located on the front panel glows.
- Adjust the individual volume controls of each channel on the front panel to obtain the desired output level.
- The level indicator LEDs glow to indicate the presence of signal at the output terminals.

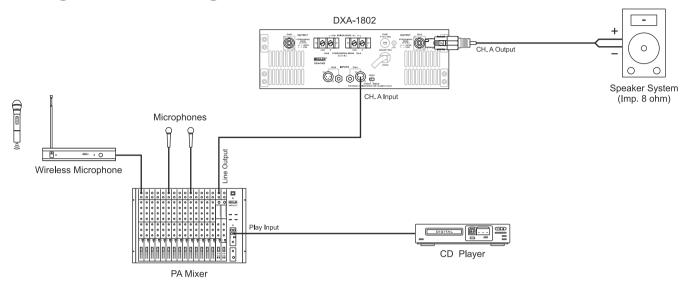
# **Mono Mode Configuration**



When operating in MONO mode, the signal source should be connected to the balanced / unbalanced input of **channel A only**. Both channels provide similar output to their respective loudspeakers. Each channel can separately drive loudspeaker loads of 8 ohm or 4 ohm.

- Connect the line output of a mixer to channel A input of the amplifier. Input can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).
- Connect a speaker system (8 ohm / 4 ohm) on the output terminal of each channel. It is recommended to use the speakon connectors and wire these as per fig. 3 (Output Connections for Stereo / Mono Mode).
- To select MONO mode, keep the slide switch, provided at rear panel, in MONO position and ensure that the mono LED located on the front panel glows.
- The desired output levels of both the channels are adjustable by volume control of channel A only.
- The level indicator LEDs glow to indicate the presence of signal at the output terminals.

# **Bridge Mode Configuration**



For BRIDGE mode operation, the signal source should be connected to the balanced / unbalanced input of **channel A only**. This mode provides the combined power output of both channels for connecting a single loudspeaker load. The combined loudspeaker load **should not go below 4 ohm.** 

- Connect the line output of a mixer to channel A input of the amplifier. Input can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).
- Connect a speaker system (not below 4 ohm) on the speakon output of channel A only. It is recommended to use the speakon connectors and wire these as per fig. 4 (Output Connections for Bridge Mode).
- If however terminal strips are to be used for bridge mode then connect the positive (+) of the
- loudspeaker to the positive (+) of terminal strip for channel A and the negative (-) of the loudspeaker to the positive (+) of terminal strip for channel B.
- To select bridge mode, keep the slide switch, provided at rear, in BRIDGE position and ensure that the bridge LED located on the front panel glows.
- The desired output levels of both the channels are adjustable by volume control of channel A only.
- The level indicator LEDs glow to indicate the presence of signal at the output terminals.



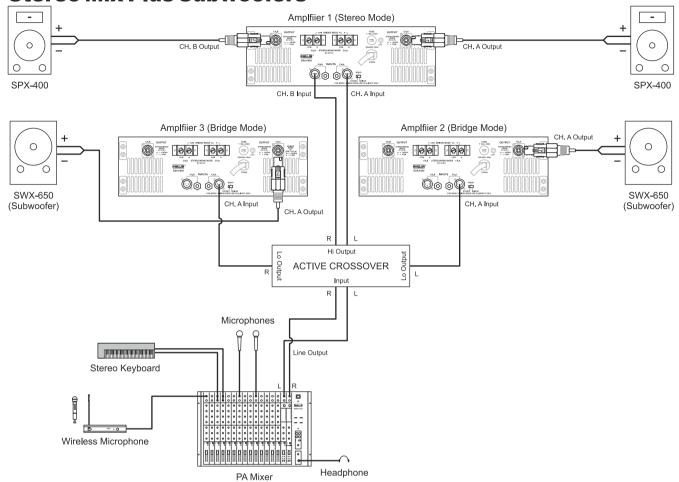
# Tips for Safe Operation

- The amplifier is supplied with a 15 Amp 3 Pin AC mains plug. The 3 core AC mains cable should be terminated with this AC mains plug by connecting red wire on live pin (L), black wire on neutral pin (N) and green wire on earth pin (E).
- The amplifier must be connected to an AC earthed mains outlet that can deliver the maximum power required. The use of extension cables or adaptors should be avoided as this can jeopardize correct current delivery to the amplifier.
- All connections must only be carried out or changed with the amplifier switched OFF.
- Ensure proper impedance matching while in use for BRIDGE mode applications. For continuous safe operation, resultant impedance of the speakers 8 ohm is recommended.

- For 2 ohm / 4 ohm applications, it is recommended to use speakon connectors only.
- Use of cable 40 / 36 or thicker is recommended to prevent power losses.
- The level of input signal should not exceed the specified input sensitivities. Excessive input signal levels result in over driving of input circuit which leads to saturated / distorted output at speaker terminals.
- Do not operate the amplifier with continuously blinking CLIP LED. The respective volume control of the channels must be adjusted so that the output level does not clip and distort.
- Do not obstruct the front or sides of the amplifier for necessary intake of air.

# Typical Applications

# Stereo Mix Plus Subwoofers

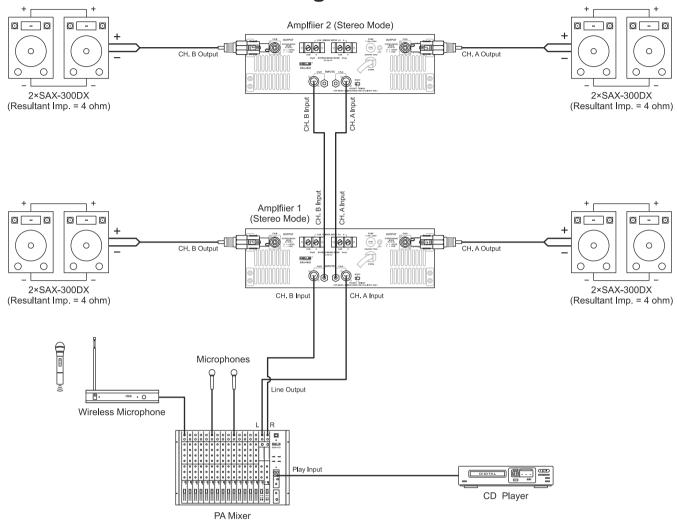


- Connect the Left and Right outputs of the Audio mixing console to the respective inputs of the Active Crossover.
- Connect the Left and Right High frequency output of the active crossover to the respective input channels A & B of amplifier 1. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).
- One number of full range loudspeaker system SPX-400 can be connected to each of the output channels of amplifier 1. The output speakon connectors should be wired as per fig. 3 (Output Connections for Stereo / Mono Mode).
- Amplifier 1 will be used in stereo mode. Keep the slide switch of amplifier 1 in stereo position, as indicated by the glow of stereo LED.
- Feed the Left Low frequency output signal of the crossover to the channel A input of amplifier 2. Similarly feed the Right Low frequency output signal of the crossover to the channel A input of amplifier 3. Inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

- One no. each of high powered subwoofer system SWX-650 can be connected to the channel A outputs of amplifiers 2 and 3. Output speakon connectors to be wired as per fig. 4 (Output Connections for Bridge Mode).
- The speakon is the preferred choice for connections, but if the output connections are to be made on terminal strips for bridge mode applications, then (+) of the speaker should be wired on (+) terminal of channel A output and (-) of the speaker should be wired on (+) terminal of the channel B output.
- Amplifiers 2 and 3 will be used in bridge mode. Keep the slide switch of amplifiers 2 and 3 to BRIDGE position to activate bridge mode. This is indicated by the glow of bridge LED of both amplifier 2 and 3.
- Finally adjust the volume control of channel A & B in amplifier 1 to control the level of their respective SPX-400s.
- Also, adjust the volume control of channel A in amplifiers 2 and 3 to control the levels of their respective SWX-650s.

# • Typical Applications...

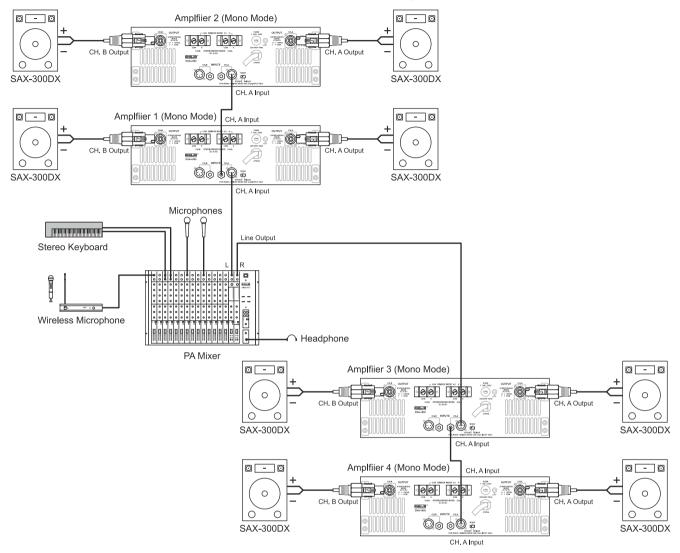
# **Stereo Mode - Cascade Configuration**



- Connect the Left and Right outputs of the Audio mixing console to the channel A & B inputs (XLR / jack) of amplifier 1.
- The XLR and jack inputs of the amplifier are in parallel and either ones can be used.
- The inputs can be wired as per fig. 1 & 2 (Input connections for Balanced and Unbalanced Mode).
- Connect two nos. of speaker system SAX-300DX in parallel on each channel outputs A & B of amplifier 1. Output speakon connectors to be wired as per fig. 3 (Speakon Connections for Stereo / Mono Mode).
- For cascading another amplifier, connect the unused inputs (jack / XLR) of amplifier 1 to the corresponding channel inputs (XLR / jack) of amplifier 2.
- The inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).

- The speaker connections of amplifier 2 are done in a similar way as for amplifier 1.
- Amplifier 1 and 2 will be used in stereo mode. Keep the slider switch of amplifier 1 and 2 in stereo position. This is indicated by the glow of stereo LEDs in each amplifier.
- Adjust the volume controls of channel A & B of both the amplifiers to control the levels of their respective SAX-300DXs.
- Finally any adjustments in the tonal quality of the sound, if required, can be made from the audio mixing console.

# **Mono Mode - High Power Stereo Configuration**



- Connect the Left line output of the Audio mixing console to the channel A input (XLR / jack) of amplifier 1. The XLR and jack inputs of the amplifier are in parallel and either ones can be used.
- Connect the unused channel A input (jack / XLR) of amplifier 1 to the channel A input (XLR / jack) of amplifier 2. The jack and XLR inputs can be wired as per fig. 1 & 2 (Input Connections for Balanced and Unbalanced Mode).
- The Left speaker stack comprises of four nos. speaker system SAX-300DXs. Each speaker is individually connected to the four speaker outputs available from amplifier 1 (channel A & B) and amplifier 2 (channel A & B).
- Output speakon connectors to be wired as per fig.
   3 (Output Connections for Stereo / Mono Mode).
- Amplifier 1 and 2 will be used in mono mode.

- Keep the slide switch of amplifier 1 and 2 in mono position. This is indicated by the glow of mono LEDs of each amplifier.
- Similarly, connect the Right line output of the Audio mixing console to the channel A input (XLR / jack) of amplifier 3. Also connect the unused channel A input (jack / XLR) of amplifier 3 to the channel A input (XLR / jack) of amplifier 4.
- The Right speaker stack's connections are done in a similar way as for Left speaker stack's connections. Amplifier 3 and 4 will also be used in mono mode.
- Adjust the volume controls of channel A only for all the four amplifiers to control the levels of their respective speakers.
- Finally any adjustments in the tonal quality of the sound, if required, can be made from the audio mixing console.

# Protections & Installations

# Thermal Protections Output Devices

Due to excessive heating of output devices, the thermal protection circuits bring the audio signal to mute status. Onset of thermal protection circuit is indicated by glowing of TEMP LEDs (yellow) in each channel. To restore normal operating conditions, it is recommended to switch off the amplifier and rectify the cause.

#### Transformer

Due to excessive heating of output devices, the thermal protection circuits bring the audio signal to mute status. Onset of thermal protection circuit is indicated by glowing of TRANSFORMER TEMP LED (red). To restore normal operating conditions, it is recommended to switch off the amplifier and rectify the cause.

# DC, RFI Protection

Inbuilt circuitry is provided to protect the loudspeakers from any offset DC voltages. Also sufficient suppression filters at primary and secondary power supplies have been inbuilt, to overcome RF interferences.

#### Overload / Short Circuit Protection

Protection circuit is provided in both channels for the safety of output devices in case of overloading or mismatching of impedances at outputs. This circuit brings the input signals to mute condition till reset buttons of the respective channels are pressed.

# Over-voltage (Mains) Protection

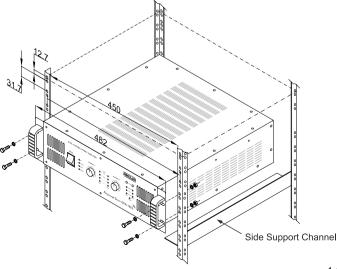
The amplifier is well protected even when the AC mains voltage fluctuates to 300-330V. The over voltage protection circuitry is provided to switch the amplifier to operate within safe voltages (i.e. 230-260V). The amplifier is well protected for use on gensets, where AC voltage fluctuates to 300V or more.

#### **Fuses**

- a. 1 × 15 A fuse for AC mains.
- b.  $4 \times 13A$  fuses for +ve and -ve DC supply.
- c. 4 × 3 A fuses for ±1 A regulated power supplies.

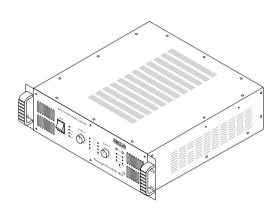
# 19" Rack Installation

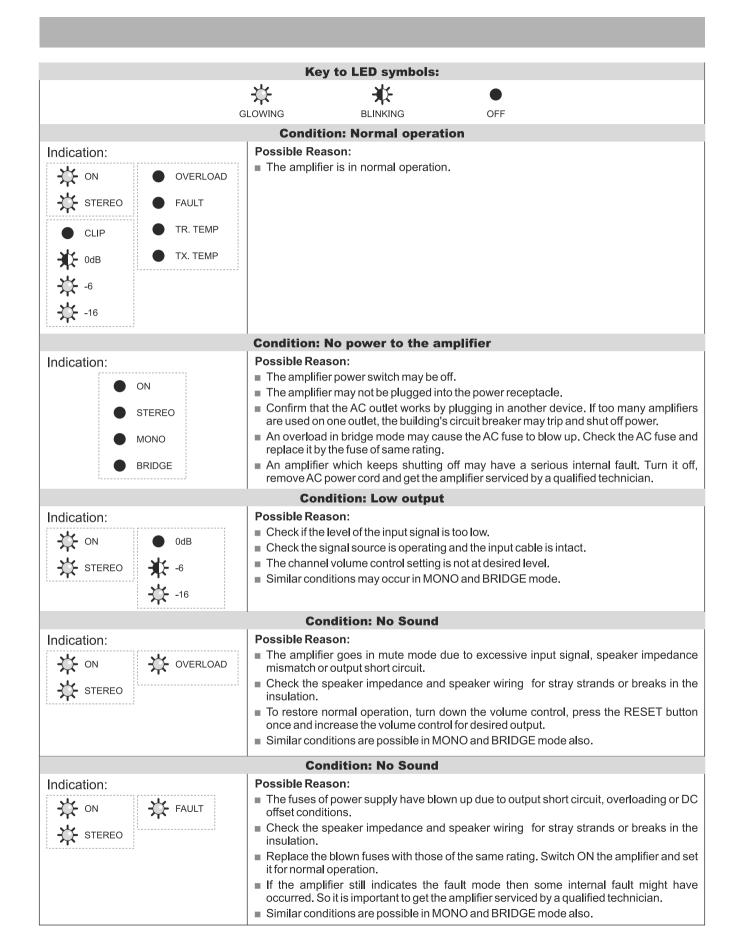
- The amplifier is designed for use in a standard 19"rack with height of 3U units.
- In order to provide sufficient support base to the heavy amplifier, it is essential to use the 19" rack system with side support channels.
- The installed amplifier, therefore, is well supported by the side support channels as well as rigidly fixed on to the rack through the two rack mount side brackets duly fitted with 'U' type handles, as shown in the figure below:



# **Table Top Usage**

The 'U' handles are helpful in easy portability of the amplifier for table top usage.





# • Trouble Shooting...

# Indication: Trouble Shoot Indication: Trouble Shoot Trouble Sh

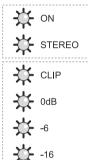
## **Condition: No Sound**

# Possible Reason:

- The amplifier goes in mute mode due to output short circuit, overloading or poor ventilation resulting into the rise in temperature either of output devices or power transformer as indicated by respective LEDs to unsafe region.
- Switch off the amplifier to cool down.
- Check if the fan is working, proper ventilation is provided and output connections are as recommended.
- To restore normal operation, turn down the volume control, press the RESET button once and increase the volume control for desired output.
- Similar conditions are possible in MONO and BRIDGE mode also.

#### **Condition: Distorted Sound**

# Indication:

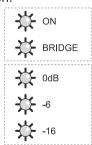


#### Possible Reason:

- The input signal level may be too high. So turn down the amplifier level controls.
- Check the level of signal from input source. If it is high then reduce the input signal level
- The amplifier should never be operated at a level which causes the clip LEDs to illuminate constantly.
- Similar conditions are possible in MONO and BRIDGE mode also.

#### **Condition: Either low or no sound**

# Indication:



#### Possible Reason:

- This could be due to wrong speakon connections or faulty speaker.
- Check the output speakon connections as per fig. 4 on page no. 7 (Output Connections for Bridge Mode).

# **Condition: Hum**

#### Possible Reason:

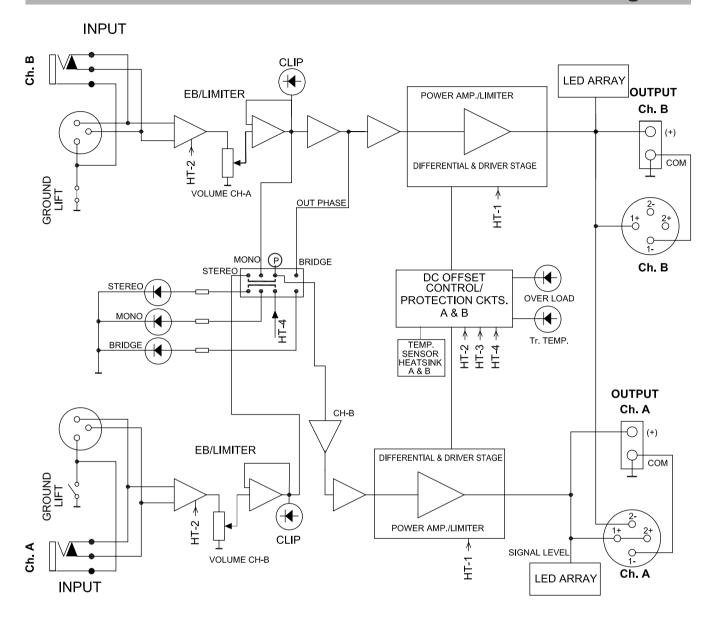
- Move cabling and signal sources to identify the problem areas in the system. Cables with faulty shielding are a frequent entry point for hum.
- In the situations where the hum is present in the installations due to close looping of ground, cut the jumper on the input PCB to isolate input ground to mains earth.

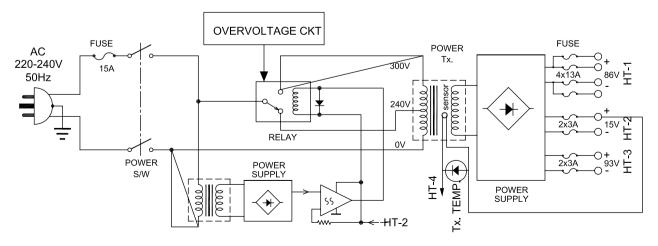
# **Condition: Hiss**

#### Possible Reason:

Unplug the amplifier input to confirm whether the hiss is coming from the source or a
device upstream. The erratic or popping noises indicate an electronic fault in the
offending unit.

# Block Diagram





# Specifications

Model	DXA-1802	
Continuous Rated Power		
Stereo/Mono 8 4 2		
Bridged Output 8		
Single Channel Driven Output		
8 4 2	2 720W	
THD + N	0.5%	
Frequency Response (-1dB)	20-20,000Hz	
Power Bandwidth (0.5% THD)	20-20,000Hz	
Input Sensitivity	0dBm (775mV)	
Input Impedance	10k Unbalanced, 20k Balanced	
S / N Ratio	95dB	
Channel Separation	65dB at 1kHz	
Damping Factor	400 : 1 (8Ω)	
Slew Rate	35V/μs	
Protections	Temperature, DC, RFI, Short Circuit, Overload, AC over voltage, Built-in Limiter AC: Fuse 15Amp. (T 15A L); ± DC: Fuse 2 x 15Amp. (T 15A L) for each zone	
Input Connectors	2 × XLR, Stereo Phone Jack 6.3mm	
Output Connectors	Speakon 4-Way, Heavy duty Screw Terminals each channel	
Cooling	Variable Speed DC Fan with Temperature Sensing	
Front Panel Controls	2 × 21 step level Attenuators	
Indicators	ON, Mode (Stereo, Mono, Bridge)	
	Signal levels, Clip, Temperatures, Fault, Overload (Ch. A & B)	
Power Consumption (Rated)	2700VA @ 240V / 50Hz	
Dimensions	W482 × H165 × D500mm	
Weight	26.0kg approx.	

<sup>•</sup> Design and Specifications are subject to change without notice owing to continuous product upgradation.
• Technical specifications are subject to production tolerances.

<ul> <li>Notes</li> </ul>

# For Your Records

Model No	
Serial No.	
Dealer's Name	
Dealer's Phone NoFax No	
Date of Purchase	

Model and Serial Nos. are printed on the rear panel of the product.

Design and Specifications are subject to change without notice owing to continuous product up-gradation. Technical specifications are subject to production tolerances.

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