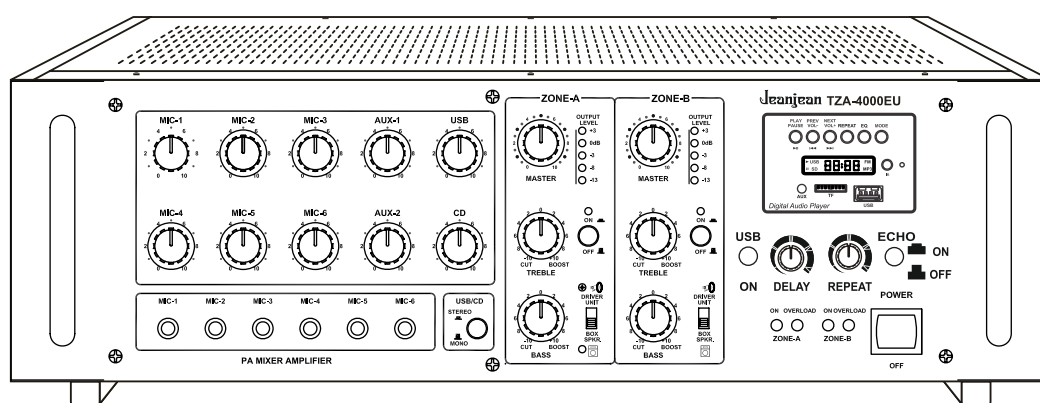


Jeanjean

PA Mixer Amplifier

400W RMS/600W Max.

TZA-4000EU

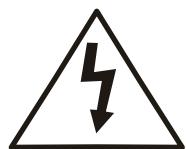


- ◆ Thank you for purchasing the JeanJean P.A. Mixer Amplifier.
- ◆ Please read this manual thoroughly before making connections and turning on the power. Following the instructions in this manual will enable you to obtain optimum performance from your new JeanJean P.A. Mixer Amplifier.
- ◆ Please retain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

• Safety Instructions

CAUTION: To reduce the risk of electric shock, do not remove the top cover. No user serviceable parts inside. Refer servicing to qualified personnel only.

WARNING: To reduce the risk of fire or electrical shock, do not expose this equipment to rain or moisture.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure, that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

Detailed Safety Instructions: All the safety instructions in this manual should be read before operating this equipment.

Retain Instructions: The operation manual should be kept for future reference.

Follow Instructions: All operation and safety instructions should be followed.

Water and Moisture: In order to prevent any fire or shock hazard, do not expose this equipment to rain or moisture.

Power Source: The equipment should be connected to a 220-240V 50Hz AC or 2 x 12V DC power source. For 220V AC operation, a tap on the power transformer is available, which should only be changed by an authorized dealer.

Power-cord Protection: Do not cut, kink, damage or modify the power supply cord supplied with the equipment. Keep the power supply cord away from heaters & harmful chemicals. Do not place heavy objects on the power cord.

Operation on Generator: When operating the amplifier on a generator, make sure it is switched 'OFF' till the generator voltage has stabilized and then only switch the amplifier 'ON'.

Ventilation: The amplifier should be situated so that its location or position does not interfere with its proper ventilation. Also do not insert or drop anything into the ventilation holes.

Protection Against Shocks: The cover strip of the 100V output terminals and 4Ω / 8Ω output terminals should be replaced after making connections. Failure to do so may result in exposure to voltage of upto 100V. Also do not insert or remove the power supply plug with wet hands so as to avoid electric shock.

Prevention of Loss in Speaker Cables: Always use thick cables for speaker connections. Use of cable type 40/36 or thicker is recommended for connecting low impedance speakers to avoid power loss in the cables, as heavy current flows through the cables.

Proper Selection of Output Terminals: When 100V line is being used, do not connect speakers to 4Ω or 8Ω tap. Similarly do not connect speakers to 100V line when 4Ω or 8Ω tap is being used.

Grounding or Earthing: The equipment must be earthed properly before operating it to avoid electric shock. A wire from the Earth Terminal must be connected to either water pipe or to electrical earth for safe operation.

Conformity to Electromagnetic Compatibility & Low Voltage Directives: This equipment corresponds to the directive for electromagnetic compatibility 89/336/EEC & the low voltage directive 73/23/EEC, meeting standard EN 60065.

Replacing AC Mains Fuse: After disconnecting the AC mains and rectifying the defect in the amplifier, change the fuse with another of the specified rating only. Insert and tighten the fuse holder completely to avoid any loose contact.

Exposure to Hot Region: Do not touch the Heat Sink while the amplifier is in operation.

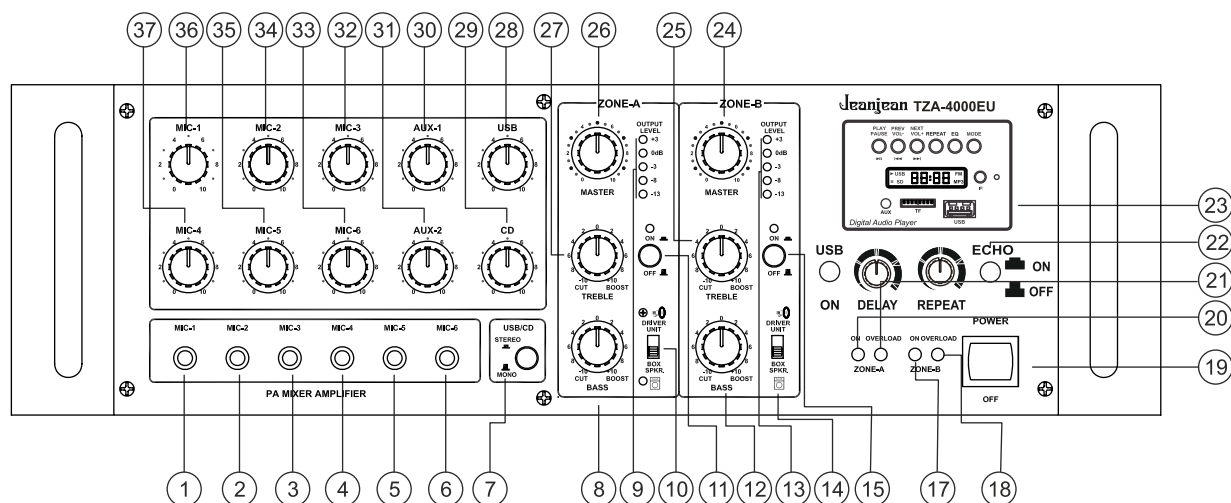
• **Table of Contents**

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• **Features/General Description of Product**

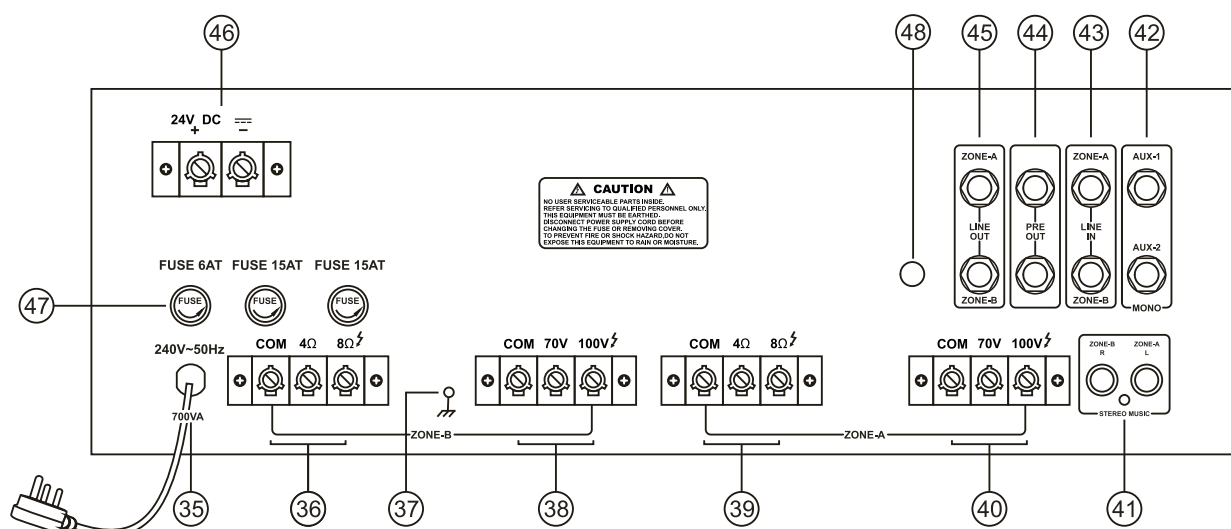
- Ideal for use in a wide variety of 2- Zone PA applications where high power is required.
- TZA-4000EU is a 400 Watts 2 zone amplifier offering 6 independent unbalanced Mic Inputs & 2 Aux inputs to feed one or both zone and each zone having its independent tone and master controls for separate and combined operation.
- Stereo Music Inputs through two separate left & right channels are provided to connect Stereo Cassette Player or CD Player.
- Line Inputs have been provided for each zone separately for connecting CD Player or External Mixer. Line Outputs provided for each zone separately for connecting booster amplifier for more power.
- Pre-Amp Output is provided for connecting another amplifier or Cassette Recorder for recording the programme.
- The amplifier also has Mono/Stereo input switch. This can be used for selecting mono or stereo operation.
- TZA-4000EU has individual Zone ON / OFF facility. Sound from each zone can be switched on and off without disturbing the settings of tone and volume controls.
- Box Speaker / Driver Unit selector switch has been provided for protecting the Driver Unit's diaphragm from unwanted low frequencies. Since Box speakers can reproduce the full spectrum of audio frequencies but driver units cannot reproduce very low frequencies. The switch should be positioned to the driver unit side when Driver Units, Horns and column speakers are connected.
- 15Amp Fuse has been provided for each zone. It safeguards the amplifier against overload and short circuit.
- Power losses in speaker wirings are reduced as the Two zones share the delivering of 400W of power.
- Provision for automatic changeover from AC to battery operation ensuring continuity of program.
- Protection provided against the reverse polarity of battery connections.
- Ease of operation, combined with service accessibility has been optimized in the design.

• Front Panel Controls & Features



1. **MIC-1 Input Jack Socket**
For accepting unbalanced signal from a low impedance microphone.
2. **MIC-2 Input Jack Socket**
3. **MIC-3 Input Jack Socket**
4. **MIC-4 Input Jack Socket**
5. **MIC-5 Input Jack Socket**
6. **MIC-6 Input Jack Socket**
7. **Mono/Stereo Switch**
For selecting the music programme in mono or stereo modes.
8. **BASS Control (Zone A)**
For cutting or boosting the signal level of low frequencies.
9. **LED Array (Zone A)**
These indicate the output level of the amplifier for Zone A.
10. **BOX SPEAKER / DRIVER UNIT Selector Switch (Zone A)**
11. **Zone-A ON / OFF SWITCH with indicator LED**
12. **BASS Control (Zone B)**
13. **LED Array (Zone B)**
14. **BOX SPEAKER / DRIVER UNIT Selector Switch (Zone B)**
15. **Zone-B ON / OFF SWITCH with indicator LED**
17. **POWER LED (Zone B)**
This LED glows when the zone B of the amplifier is switched ON.
18. **OVERLOAD LED (Zone B)**
This LED glows when the circuit protector trips.
19. **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.
20. **POWER LED (Zone A)**
21. **OVERLOAD LED (Zone A)**
22. **ECHO**
23. **MP3 PLAYBACK FACILITY**
(For Description see page no.7)
24. **MASTER Volume Control (Zone B)**
For adjustment of the overall volume level from Zone B.
25. **TREBLE Control (Zone B)**
26. **MASTER Volume Control (Zone A)**
27. **TREBLE Control (Zone A)**
28. **USB Volume Control**
29. **CD Volume Control**
30. **AUX-1 Volume Control**
31. **AUX-2 Volume Control**
32. **MIC-3 Volume Control**
33. **MIC-6 Volume Control**
34. **MIC-2 Volume Control**
35. **MIC-5 Volume Control**
36. **MIC-1 Volume Control**
37. **MIC-4 Volume Control**

• Rear Panel Controls & Features



35. 3 CORE AC MAINS CABLE With Plug

36. SPEAKER Terminal Block for Zone B (4W and 8W)

For connecting low impedance speakers.

37. EARTH Terminal

38. SPEAKER Terminal Block for Zone B (70V, 100V)

For connecting speakers with 100V line matching transformers.

39. SPEAKER Terminal Block for Zone A (4W and 8W)

40. SPEAKER Terminal Block for Zone A (70V, 100V)

41. STEREO RCA Socket

These two RCA Jacks marked 'L' & 'R' are for connecting STEREO Input from Cassette Player or CD Player.

42. AUX-1 & AUX-2 Input Jack Sockets

For accepting an unbalanced signal from an auxiliary source like a Tuner, Cassette Player, Echo or Audio Mixer etc.

43. LINE IN (Zone A & Zone B)

For connecting inputs such as a CD Player. Also for connecting external Mixer to enhance the number of inputs.

44. PREAMPLIFIER Output Jack Sockets

For connecting to the Aux input of another amplifier or a Cassette Recorder for recording purpose. Two jack have been provided in parallel.

45. LINE OUT (Zone A & Zone B)

For connecting to a booster amplifier to obtain combined higher power output.

46. BATTERY Terminal Block

For connecting two 12V Car Batteries in series (which becomes 24V) as standby power source.

47. AC MAINS FUSE (Rating 6 AMP 250V)

This protects the amplifier from any excessive current flow.

48. ANTENNA RCA SOCKET

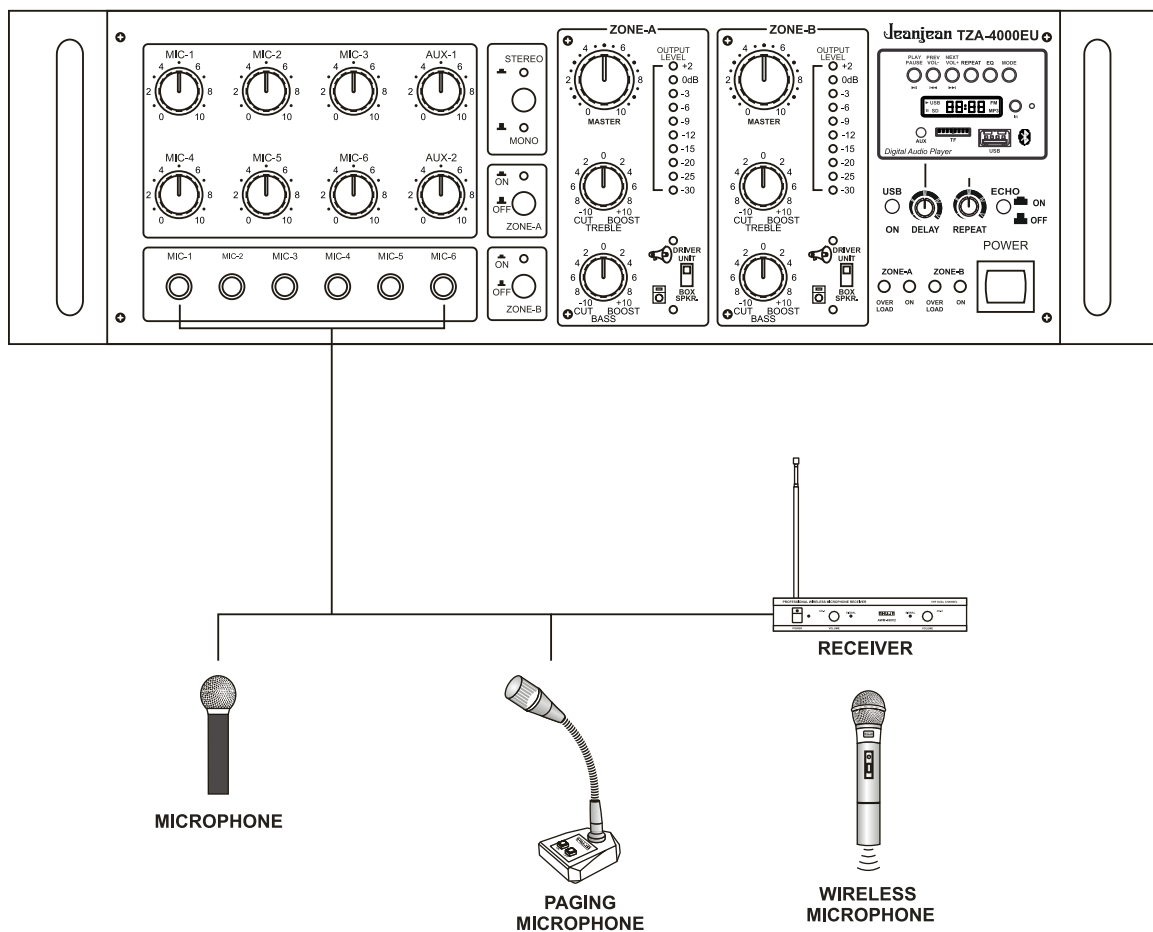
⚠ Caution

- The equipment must be earthed properly before operating it to avoid electric shock. A wire from the Earth Terminal must be connected to either water pipe or to electrical earth for safe operation.

• Interconnections

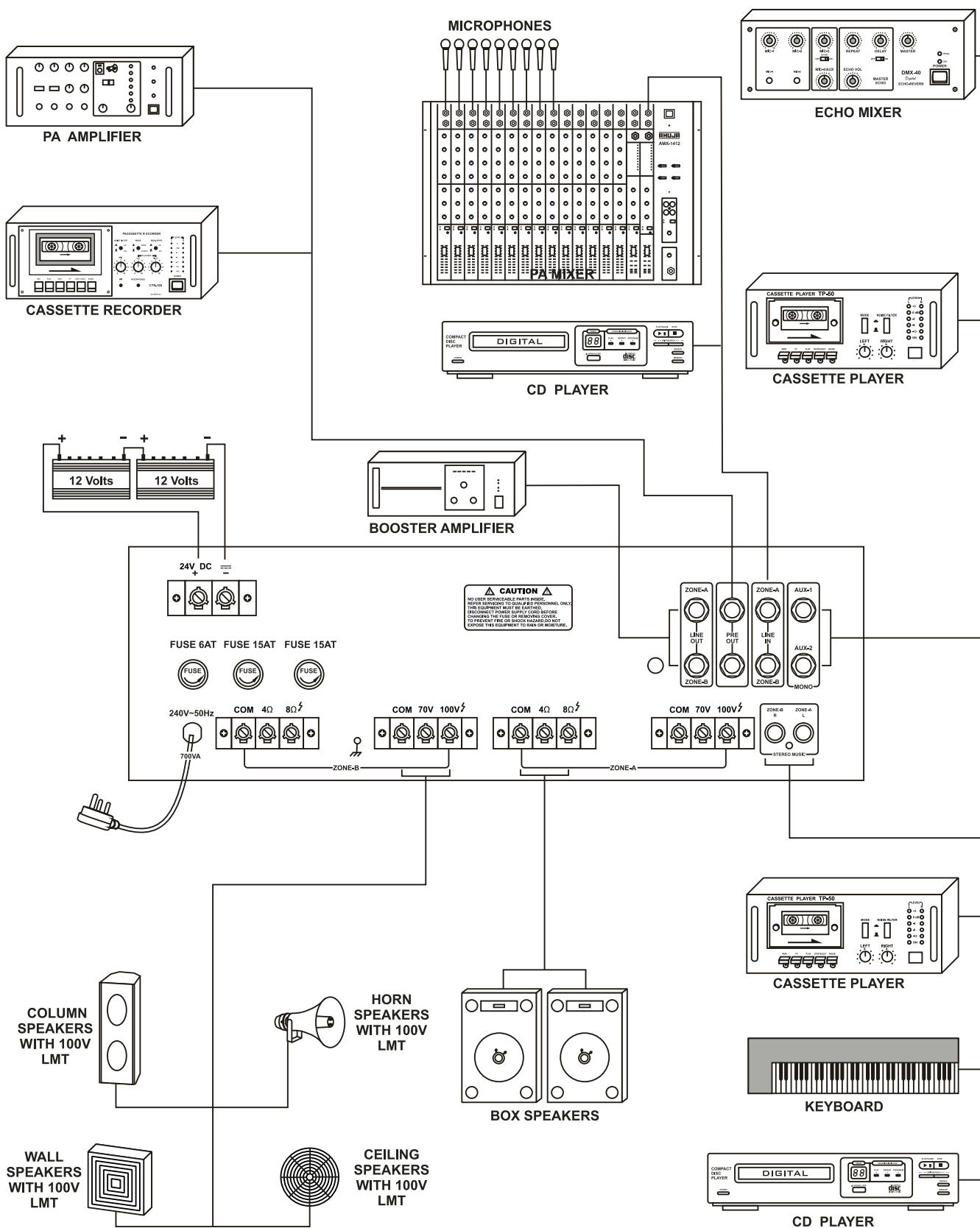
- The amplifier can be placed as a tabletop unit. Considerable heat is generated inside the amplifier during continuous use, therefore, the amplifier should be situated so that its location or position does not interfere with its proper ventilation.
- The amplifier must be powered through an AC earthed mains outlet.
- All connections must only be carried out or changed with the amplifier switched OFF.
- The amplifier may be operated from a DC supply of 24 Volts (two car batteries connected in series).
- To avoid loud switching noise, always switch ON the power amplifier after all other units of the audio system have been switched ON. After operation switch it OFF first and then the other units.
- The connection diagram below, displays the typical types of input sources (Mics, Keyboard, Cassette Player, Mixer, CD Player etc.) and speakers (Wall, Ceiling, Box, Horn, Column) which can be connected to the amplifier. For correct connections and operation check the specifications of the connected equipment.

FRONT PANEL - TZA-4000EU



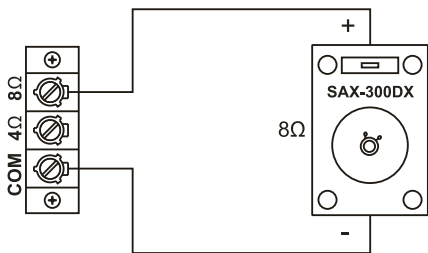
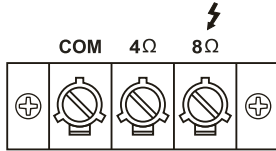
Interconnections....

REAR PANEL - TZA-4000EU

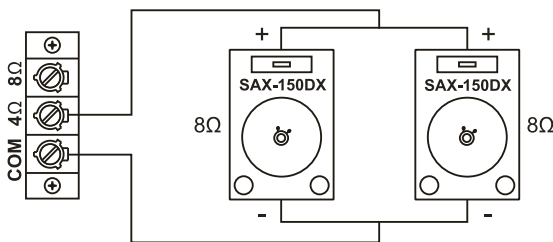


• Speaker Connection Guidelines

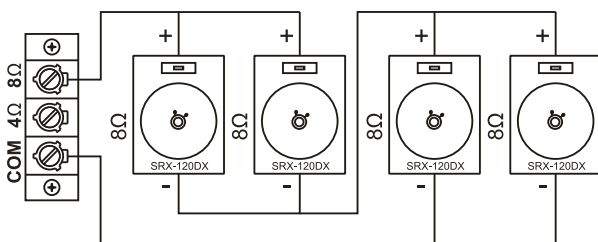
TZA-4000EU is a high-powered amplifier. Therefore it is very important that correct loudspeaker connections are made to avoid damage to the amplifier or speakers.



Resultant Impedance = 8 ohm



Resultant Impedance = $8 \text{ ohm} / 2 = 4 \text{ ohm}$



Resultant Impedance = $(8 \text{ ohm} / 2) \times 2 = 8 \text{ ohm}$

Low Impedance Speaker Connections

- Box type Speakers can be directly connected to COM - 4Ω / 8Ω Terminal Strip.
- The Box Speaker / Driver Unit switch must be kept at Box Speaker position. If by mistake the switch remains in Driver Unit position the quality of sound will not be rich and natural.
- No Driver Units / Horn Speakers / Column Speakers (with 100V LMT) should be connected to COM - 4Ω / 8Ω.

Connecting One SAX-300DX Speaker on Each Zone

One SAX-300DX speaker (Each speaker can handle 300W of power) should be connected to 8Ω taps on each zone as shown in figure.

Connecting Two SAX-150DX Speakers on Each Zone

Two SAX-150DX Speakers (Each speaker can handle 150W of power) should be wired in a parallel to each zone as shown in figure. The resulting impedance will be 4Ω. The speaker system should be connected to the 4Ω tap of each zone of the amplifier.

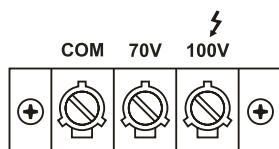
Connecting Four SRX-120DX Speakers on Each Zone

Four SRX-120DX Speakers (Each speaker can handle 100W of power) should be wired in a parallel-series combination to each zone as shown in figure. Two groups of two speakers each are connected in parallel and then the groups are connected in series. The resulting impedance will be 8Ω. The speaker system should be connected to the 8Ω tap of each zone of the amplifier.

⚠ Caution

- When speakers are connected to COM - 4Ω / 8Ω Terminal Strip NO speakers should be connected to the Red Terminal Strip marked COM - 70V / 100V of the same zone.
- Speakers should be connected only to either COM - 4Ω or COM - 8Ω terminals of the same zone as illustrated above but never to more than one set of terminals.

Speaker Connection Guidelines....



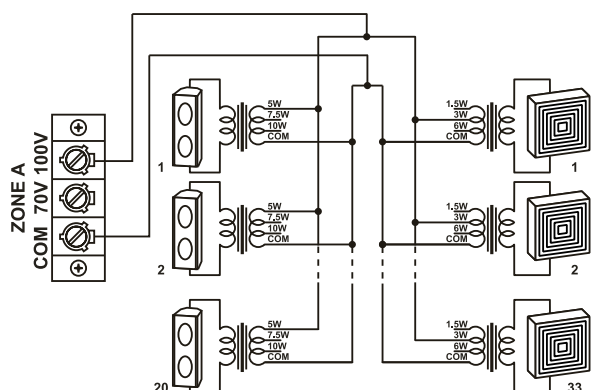
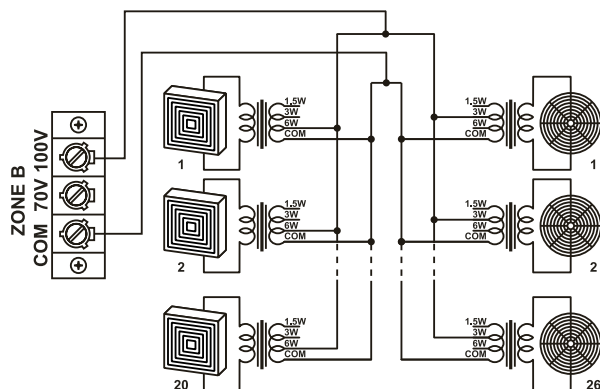
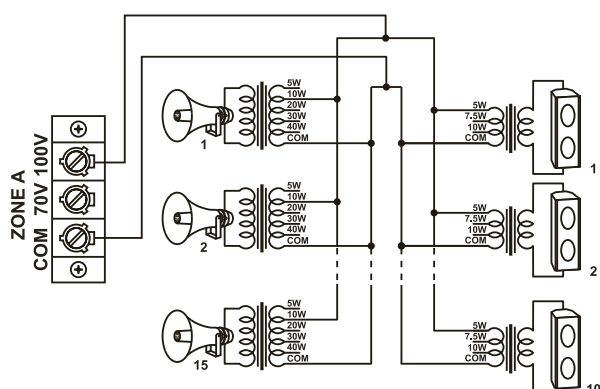
High Impedance Speakers or Speakers Using A 100V Line Matching Transformer

- Driver Units / Horn Speakers / Column Speakers with 100V Line Matching Transformers are only to be connected to COM - 70V / 100V Terminal Strip.
- When any of the above speakers are connected to the COM - 70V / 100V Terminal Strip of a zone then No Box Speakers should be connected to the COM - 4Ω - 8Ω Terminal Strip of that same zone.
- The power drawn from each zone of the amplifier should not exceed 200 Watts.

Connecting a combination of Driver Units and Columns Speakers with 100V LMTs on Zone A, Wall Speakers & Ceiling Speakers with 100V LMT on Zone B

- 15 Driver Units with 100V LMTs connected at 10W and 10 Columns Speakers with 100V LMTs connected at 5W can be operated on Zone A.

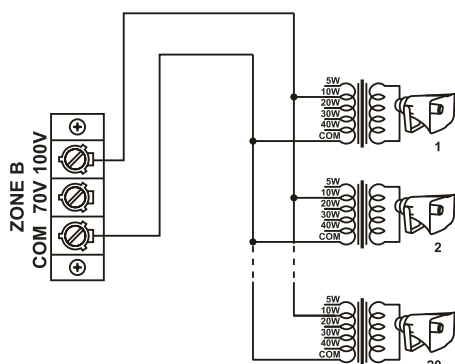
- 20 Wall Speakers with 100V LMT connected at 6W and 26 Ceiling Speakers with 100V LMT connected at 3W can be operated on Zone B.



Connecting a combination of Column Speakers and Wall Speakers with 100V LMTs on Zone A, Horn Speaker with 100V LMT on Zone B

- 20 Column Speakers with 100V LMT connected at 5W tap and 33 Wall Speakers with 100V LMT connected at 3W can be operated on Zone A.

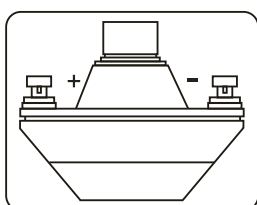
Speaker Connection Guidelines....



- On Zone B, 20 SUH-40XT Horn Speakers with 100V LMT connected at 10W can be operated.

Use of 70 Volt Line

A loudspeaker / Driver Unit with its LMT adjusted to the 15W tap, when connected to COM and 100V terminals on the amplifier's Terminal Strip will draw 15W from the amplifier but when the same is connected to COM and 70V it will only draw half power i.e. 7.5W. A good use of 70V line tap can be made in installations where large number of speakers/ driver units are to be installed for more even distribution of sound.



Correct Phasing of Loudspeakers

- When two or more Speakers / Units installed in the same area and are facing the same direction, it is essential that their cones/diaphragms act in unison. Otherwise the sound level of one speaker will be canceling the sound level of the other. To avoid any mistake, the terminals of Box speakers and the Driver Units are marked '+' & '-'. Always connect the COM of the Amplifier to '-' of speaker & 4 / 8Ω of the amplifier to the '+' of the speakers.
- In case of LMTs the COM of all the LMTs should be connected to the COM of the red strip terminal of the amplifier and the power tap to 100V line as shown in figure.

Caution

- When 70 / 100 Volt line is being used, no speakers / driver units should be connected to 4Ω / 8Ω (Low Impedance) Tap of the same zone.
- Loudspeaker / driver unit should be connected to either COM - 100V or COM - 70V terminals, but never to more than one set of terminals.

• Specifications

MODEL TZA-4000EU	ZONE-A	ZONE-B
Power Output	300 W RMS Max. 200 W RMS at 10%THD 180 W RMS at 5% THD 165 W RMS at 2% THD	300 W RMS Max. 200 W RMS at 10%THD 180 W RMS at 5% THD 165 W RMS at 2% THD
Output Regulation	≤ 2 dB no load to full load at 1kHz	
Input Channels	Mic (1-6): 0.6 mV/4.7 k Ω (Mic Source Imp. 50 Ω to 1 k Ω) Aux 1 & 2: 100 mV/470 k Ω Stereo Input: Left Channel : 200 mV/100k Ω Right Channel : 200 mV/100k Ω Line Input: Left Channel : 1 V/50 k Ω Right Channel : 1 V/50 k Ω	
Frequency Response	50 Hz – 15,000 Hz $\pm$ 3 dB	50 Hz – 15,000 Hz $\pm$ 3 dB
Signal to Noise Ratio	60 dB	60 dB
Tone Controls:		
Switch at Box Speaker Position	Bass: ± 10 dB at 100 Hz Treble: ± 10 dB at 10 kHz	Bass: ± 10 dB at 100 Hz Treble: ± 10 dB at 10 kHz
Switch at Driver Unit Position	Bass: -10 dB at 100 Hz Treble: ± 10 dB at 10 kHz	Bass: -10 dB at 100 Hz Treble: ± 10 dB at 10 kHz
Preamp Output	200 mV/600 Ω	
Line Output	1V/1k Ω	1V/1k Ω
Output Taps for Speaker Matching	4 & 8 Ω (for direct connections) 70 & 100V Line (for use with LMT)	4 & 8 Ω (for direct connections) 70 & 100V Line (for use with LMT)
Power Supply	AC : 220-240V 50 / 60 Hz DC : 24V (2 $\times$ 12V Car Battery)	
AC Power Consumption	700 VA	
DC Power Consumption	4.5 A	4.5 A
Dimensions	W510 $\times$ H172 $\times$ D385 mm	
Net Weight	24.0 kg	