

User
Manual

MA 21
Two zone mixing amplifier



Safety instructions

When using this electronic device, basic precautions should always be taken, including the following:

- 1 Read all instructions before using the product.
- 2 Do not use this product near water (e.g., near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool etc).
- 3 Use this device when you are sure that amplifier has a stable base and it is fixed securely.
- 4 This product, in combination with loudspeakers may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult with otorhinolaryngologists.
- 5 The product should be located away from heat sources such as radiators, heat vents, or other devices that produce heat.
- 6 The product should be connected to a power supply that is described in the operating instructions or are marked on the product.
- 7 The power supply should be undamaged and never share an outlet or extension cord with other devices. Never leave device plugged into the outlet when it is not being used for a long period of time.
- 8 Care should be taken that objects do not fall into liquids and liquids would not be spilled on the device.
- 9 The product should be serviced by qualified service personnel if:
 - The power supply or the plug has been damaged.
 - Objects have fallen into or liquid has been spilled on the product.
 - The product has been exposed to rain.
 - The product has been dropped or the enclosure damaged.
- 10 There are some areas with high voltage inside, to reduce the risk of electric shock do not remove cover of the amplifier.
The cover should be removed by the qualified personnel only.

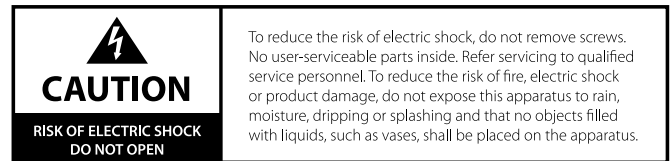


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Before you start

MA 21 two zone mixing amplifiers for commercial and industrial applications. Possibility to plug in two zone paging microphone or set microphone input to selected zone by using logic inputs in 5 pin XLR connector. Low impedance speaker lines designed in parallel to 100 V outputs. Line input selector for each zone allows to broadcast different background music into zones.

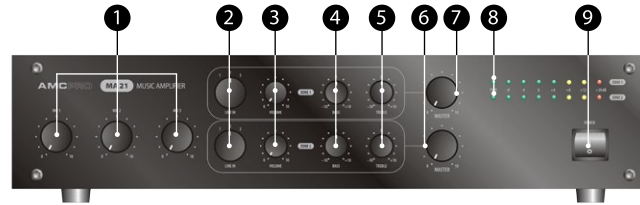
Amplifier is ideal for two zone application, but can be used in stereo background music system as well.

FEATURES

- Two 100 V or low impedance zones
- AB class audio amplifier
- Line input selector for both zones
- XLR microphone and control inputs
- Priority input MIC 1
- Selectable priority inputs MIC 2 & MIC 3
- Connector for two zone paging microphone
- Separate tone and master control for both zones
- XLR and RCA inputs connectors
- RCA preamp output

Operation

Front Panel



- 1. Mic input level control | 2. Line input selector | 3. Line input level control | 4. Tone control - bass | 5. Tone control - treble
- 6. Zone 2 master level control | 7. Zone 1 master level control | 8. Output level indicator | 9. Power switch

Rear Panel



- 1. Main power connector and fuse | 2. Main voltage selector | 3. 100V amplifier output | 4. low impedance output | 5. preamp output | 6. line level audio input
- 7. paging microphone input | 8. microphone input

Operation

Function description of MA 21 amplifier

MIC INPUT LEVEL CONTROL

These rotary knobs are designed for adjusting volume level of the 3 pin and 5 pin XLR inputs. First three inputs can be used for microphone level audio only.

LINE INPUT SELECTOR

This knob allows to select and broadcast to zone one of three audio source connected to line level RCA inputs. Individually for both zones input selector gives an opportunity to broadcast different background music to different zones.

LINE INPUT LEVEL CONTROL

These two knobs designed for adjusting volume level of line audio input.

STONE CONTROL

The separate tone controls provide attenuation of bass and treble response. The flat position is obtained when the knobs are set to middle position. Turn bass control knob (BASS) and treble tone control knob (TREBLE) clockwise to raise tone level by approximately +10 dB; turn counterclockwise to lower tone level by approximately -10 dB.

MASTER LEVEL CONTROL

This potentiometer is designed to adjust audio level in the main output.

OUTPUT LEVEL INDICATOR

These two led bars indicates output signal amplitude of both zones. If the red led indicator starts lighting continuously please decrease the sound volume by using master control, because red led bar indicates too high signal level. First led in led bar is main power indicator.

POWER SWITCH

Use this switch to power on or off the amplifier. Green led in the front panel led bar lights up if the amplifier is powered.

MAIN POWER CONNECTOR AND FUSE

Power connector is designed for main powers connecting to amplifier. This connector is combined with fuse holder and 4A 250V fuse.

MAIN VOLTAGE SELECTOR

Allows to select main power voltage. Set the proper voltage before the first time turning on amplifier according to your area: ~115 V (60 Hz) or 230 V (50 Hz).

Operation

Function description of MA 21 amplifier

100V OUTPUT

Output terminal is designed to connect speaker line to amplifier. There are available two types of output: low impedance 8 Ω and 100 V outputs for constant voltage audio line. Each of the amplifier zones can run only one output configuration at the same time. Operating amplifier using 8 Ω and 100 volt concurrently may cause damage to the amplifier or connected speakers.

LOW IMPEDANCE OUTPUT

Output designed for 8 Ω loudspeakers. Operating amplifier using 8 Ω and 100 volt concurrently may cause damage to the amplifier or connected speakers.

PREAMP OUTPUTS

These are line level RCA outputs for connecting a subwoofer or audio recording equipment. Subwoofer output is associated with master volume control. Record output does not change output level with master volume control.

LINE LEVEL AUDIO INPUT

RCA input for line level audio. Signal from line inputs can be selected and broadcast to zones by using line input selector located in the front panel.

PAGING MICROPHONE INPUT

This input is designed to connect Talk St Z2 paging microphone to amplifier. 5 pin XLR connector's audio inputs pin's and 3 pin XLR are connected in parallel with each other, because of this reason please connect only one microphone in one MIC input.

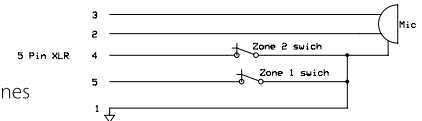
Paging microphone input pinout 5pin XLR connector:

1. GND | 2. MIC audio signal + | 3. MIC audio signal - | 4. Zone 2 mute trigger | 5. Zone 1 mute trigger

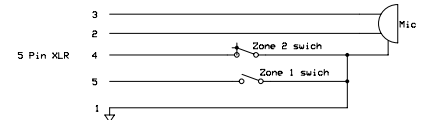
MIC 2 and MIC 3 input zoning can be controlled by external buttons, relays or external devices as well.

Application and circuit diagram:

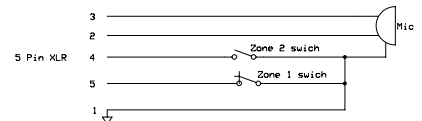
Microphone is muted in both zones



Microphone is muted in zone 2



Microphone is muted in zone 1



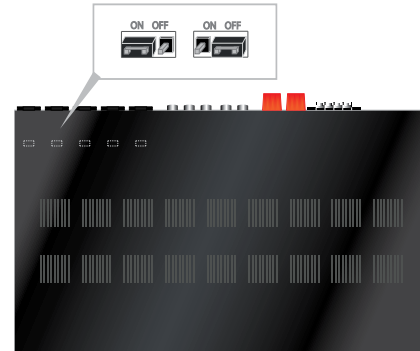
MICROPHONE INPUT

This is balanced microphone input. MIC 1 input is default priority input.

Operation

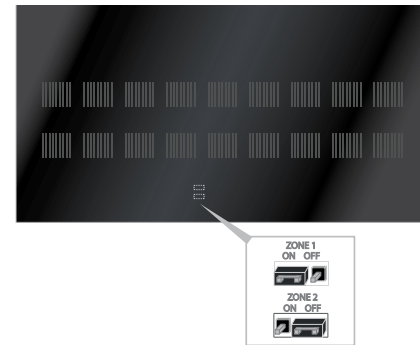
Phantom power

Phantom power can be activated inside the amplifier for all XRL inputs individually. In order to activate phantom power remove amplifier's top cover and set phantom power jumpers to position ON. Jumpers are located in the input board near the XLR connectors. All XLR input has its own jumper. Turn on phantom power for input which will be used with condenser microphone. For dynamic type microphones phantom power must be disabled.



MIC 2 & MIC 3 input priority

MIC 2 & MIC 3 input priority for Zone 1 and Zone 2 can be activated inside the amplifier. Remove amplifier's top cover and set selected zone priority jumpers to position ON. Now MIC 2 & MIC 3 will mute LINE IN signal in the selected zone. Jumpers are located in the boards near the rotary zone level controls.



Operation

Function description of paging microphone Talk St Z2

INPUT CONNECTOR

Designed to connect gooseneck microphone. 3 pin XLR connector.

ZONE 1 SWITCH

Disables microphone mute in zone 1 and allows make announcement in this zone.

ZONE 2 SWITCH

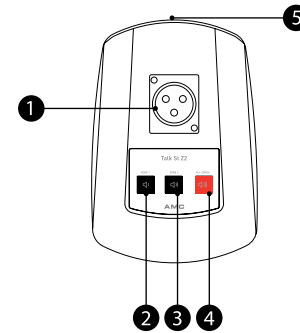
Disables microphone mute in zone 2 and allows make announcement in this zone.

ALL ZONES SWITCH

Disables microphone mute in zone 1 and zone 2 and allows make announcement in these zones.

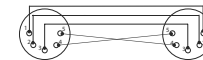
OUTPUT CONNECTOR

Designed to Talk St Z2 to MA 21 amplifier. 5 pin XLR connector. Max distance between amplifier and Talk St Z2 is 20 m. Distance can be increased if separate shielded microphone cable is used to transmit audio signal from Talk St Z2 to audio amplifier.



1. Input connector | 2. Zone 1 switch | 3. Zone 2 switch | 4. All zones switch | 5. Output connector

Talk St Z2 cable diagram



1. GND | 2. Audio signal + | 3. Audio signal - | 4. Zone 2 mute signal | 5. Zone 1 mute signal

General Specifications

Amplifier

Power supply	AC 230 V/115 V 50/60 Hz	SN range	< 70 dB
AC power consumption	500 W @ full power	Dimensions H x W x D	88 mm x 425 mm x 305 mm
Output Power	2 X 100W	Weight	9 kg
Total Harmonic Distortion	0.05 % @ 1KHz	Phantom power voltage	+13 V
Input sensitivity	XLR - 57 dBu RCA -10 dBu	Frequency Response	8 Ω output 20 Hz - 20 kHz 100 V output 50 Hz - 18 kHz
Priority input	MIC 1 (MIC 2 & MIC 3 priority setting available)	Output	8 Ω output binding post connector 100 V output screw terminal
Preamp out level	+ 2 dBu		

The specifications are correct at the time of printing this manual. For improvement purposes, all specifications for this unit, including design and appearance, are subject to change without prior notice.