

# User Manual

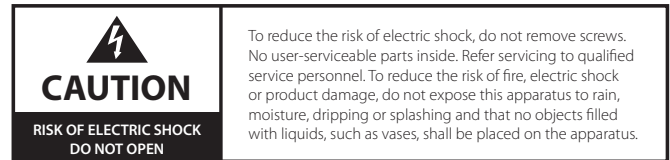
# MA 60 / MA 120 Mixing amplifier



# 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 microphone receiver or power supply. The cover should be removed by the qualified personnel only.



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# Before you start

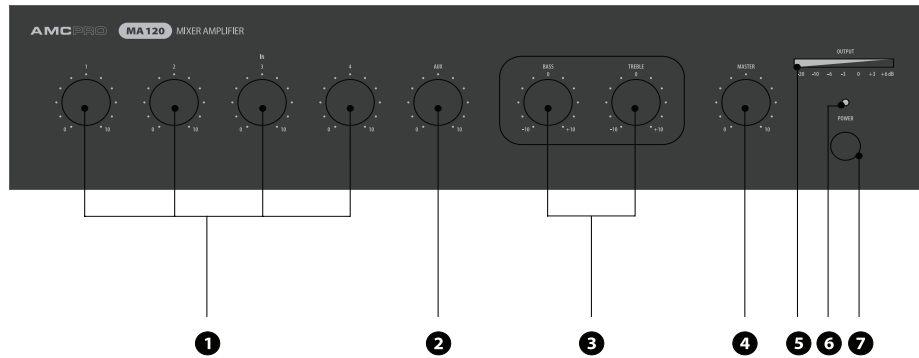
MA mixing amplifiers for rack mount or stand alone. It is a widely used mixing amplifier designed for different applications for public address and paging systems, useful for background music systems. Universal structure of the units, audio signal mixing possibilities, various inputs and outputs have wide application in simple installations. No need of professional installation assistance. Shop, bar or restaurant personnel can manage the installation of these mixing amplifiers by itself. Can be used as a component of voice evacuation or public address system. Line, microphone inputs, phantom power supply, different connectors, preamp out and direct power amplifier stage input connectors expands the fields of application of these high quality mixing amplifiers.

## FEATURES

- Four balanced XLR mic/line inputs
- DC 24V input connector for external power supply
- First XLR input – priority input
- Tone control
- Switchable phantom power on each XLR input
- Output level indicator
- AUX in and REC out connectors

# Operation

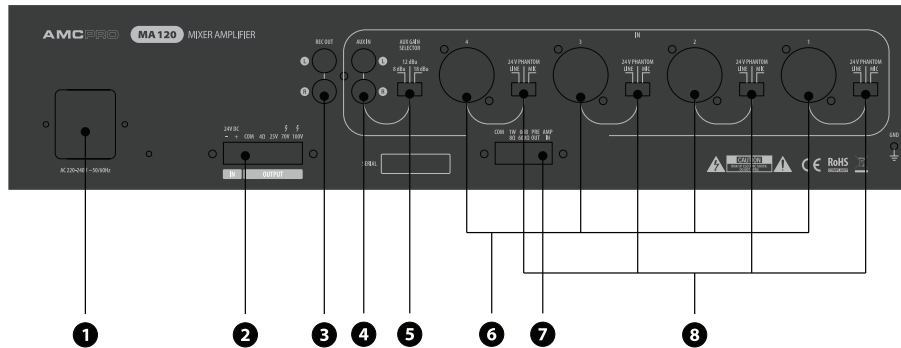
## Front Panel



1. XLR inputs level control | 2. AUX input level control | 3. Tone control | 4. Master volume | 5. Output level indicator | 6. Power indicator | 7. ON/OFF button

# Operation

## Rear Panel



1. Power connector and AC fuse | 2. Output and +24V DC terminal | 3. Stereo RCA REC output | 4. Stereo RCA AUX input | 5. AUX input gain selector | 6. Balanced XLR inputs | 7. Connector for external equipment | 8. Gain and phantom power selector

# Operation

## Front panel operation

### **XLR INPUTS LEVEL CONTROL**

These rotary knobs are for adjusting volume level of the XLR inputs. First four inputs can be used as balanced line level as well as microphone level inputs. The phantom power can be activated for these inputs separately in rear panel. The input gain selector is located in the rear panel too.

### **AUX INPUTS LEVEL CONTROL**

These rotary knobs are for adjusting volume level of the AUX input.

### **tone 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), respectively, clockwise to raise tone level by approximately +10 dB; turn counterclockwise to lower tone level by approximately -10 dB.

### **MASTER VOLUME**

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

### **OUTPUT LEVEL INDICATION**

This is level indicator of the master output. If the red LED indicator starts lighting continuously the output is distorted. In this case, decrease the sound volume by master volume control.

### **POWER INDICATOR**

This LED indicates status of the power. The LED lights up if the amplifier is powered.

### **POWER SWITCH**

Use this switch to power on or off the amplifier. The LED in the front panel lights up if the amplifier is powered.

# Operation

## Rear panel operation

### POWER CONNECTOR AND AC FUSE

Power connector is designed for main powers connecting to amplifier. This connector is combined with fuse holder and 2.5A 250V fuse for MA 120 and 1.6A 250V fuse for MA 60 amplifiers.

### OUTPUT AND +24V DC TERMINAL

24V DC terminal is designed to power up the amplifier when the main power is unavailable. Use only DC 24V power supply or batteries and take attention to polarity during the wiring. Output terminal is designed to connect audio line to amplifier. There are available 4 types of output: low impedance 4  $\Omega$  output, 25 V, 70 V and 100 V outputs for audio line. Please find some connection examples below in this user manual.

### REC OUTPUT

This is line level stereo RCA output to connect audio recording equipment.

### AUX INPUT

Stereo RCA input with selectable sensitivity. There is a possibility to connect the line level audio, input gain can be adjusted by using AUX input gain selector.

### PRIORITY

Input 1 is a priority input. Priority is fixed and cannot be switched off.

### AUX INPUT GAIN SELECTOR

This selector is designed to adjust the gain for the AUX input. There are available three gain settings: -8 dBu, -12dBu and -18dBu.

### BALANCED XLR INPUTS

These balanced XLR inputs are universal, the gain (MIC or LINE) of these inputs are selectable by switch located near the input in the rear panel. If the 24V PHANTOM power is activated the input gain sets to microphone level automatically. Please note: Phantom power is switchable on each XLR input separately. First balanced XLR input have a priority against other inputs.

### CONNECTOR FOR EXTERNAL EQUIPMENT

**PREAMPLIFIER OUTPUT:** This is line level output directly from device preamplifier. Preamplifier output and amplifier input are designed to insert signal processor such as equalizer. **DIRECT AMPLIFIER INPUT:** This is line level input directly to device power amplifier. 1W 8 $\Omega$  and 0dB 600 $\Omega$  are designed for music on hold.

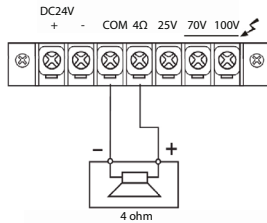
### GAIN AND PHANTOM POWER SELECTOR

This selector is designed to adjust the gain for the balanced XLR inputs and select 24V phantom power if condenser microphones are used.

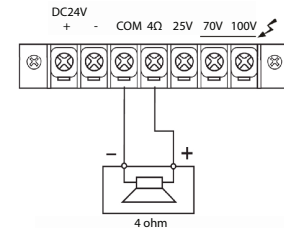
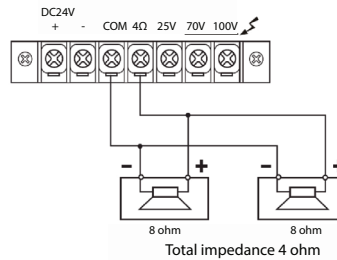


# Operation

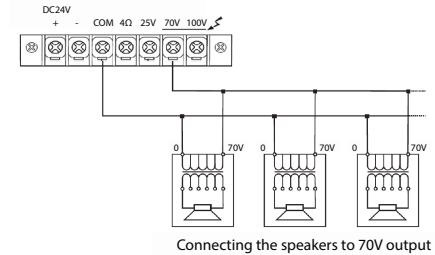
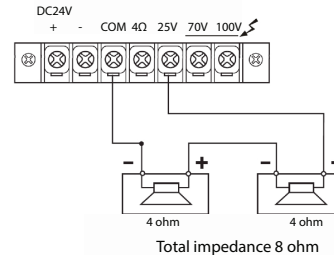
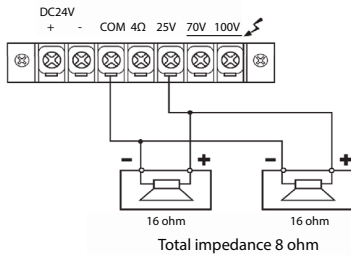
## Output terminal



Connecting the speakers to 4 ohm output

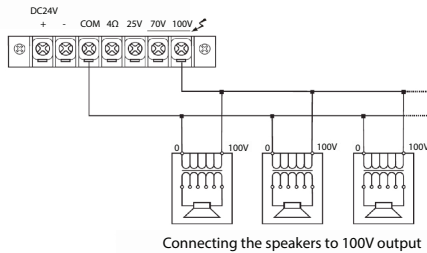


Connecting the speakers to 4 ohm output



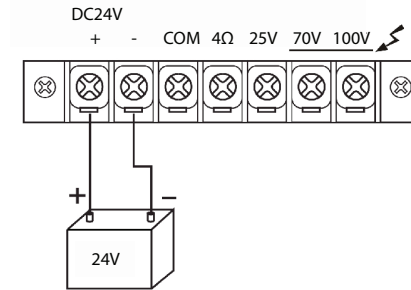
# Operation

## Output terminal



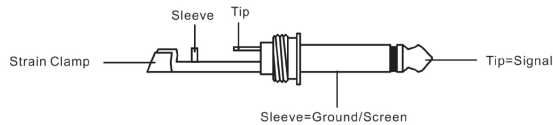
Each of the amplifier channels can run only one output configuration at the same time. Operating amplifiers using 4 ohm and 70 or 100 volt concurrently may cause damage to the amplifier or connected speakers.

There is possibility to connect external power supply, external battery etc. Please find the connection example.

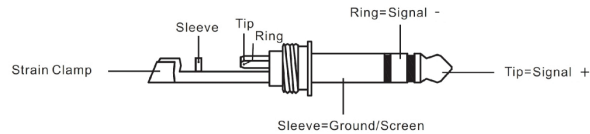


# Controls and connections

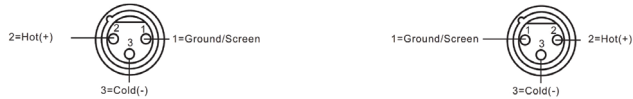
## Connectors



### TS connector



### TRS connector



### XLR male connector

### RCA connector



### XLR female connector

## Cable wiring examples



Cable to balanced input from balanced output. TRS connectors.



Cable to unbalanced input from balanced output. TRS and TS connectors.



Cable to balanced input from unbalanced output. TS and TRS connectors.



Cable to unbalanced input from unbalanced output. TS connectors.

# Controls and connections



Cable to balanced input from balanced output. XLR connectors.



Cable to unbalanced input from balanced output. XLR and TS connectors.



Cable to balanced input from unbalanced output. TS and XLR connectors.



Cable to balanced input from balanced output. TRS and XLR connectors.



RCA cable.



Cable to unbalanced input from RCA output. RCA and TS connectors.



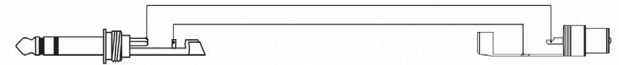
Cable to balanced input from RCA output. RCA and XLR connectors.



Cable to balanced input from RCA output. RCA and TRS connectors.



Cable to RCA input from balanced output. RCA and XLR connectors.



Cable to RCA input from balanced output. RCA and TRS connectors.

# General Specifications

MA 60

MA 120

Power supply	AC 230 V, 50 Hz or 24 VDC	
Fuses	Fuse for AC power: 1.6A, 250V, Ø 5.2x20mm. Fuse for DC power: 8A, 250V, Ø 5.2x20mm.	Fuse for AC power: 2.5A, 250V, Ø 5.2x20mm. Fuse for DC power: 15A, 250V, Ø 5.2x20mm.
Output power	60 W	120W
AC power consumption	160 W	320 W
Total harmonic distortions	< 2%	
Priority	Input 1	
Input sensitivity	Line 0 dBu MIC -63 dBu AUX -17 dBu	
Frequency response	60 Hz – 20 kHz	
HP filter	3dB at 100Hz	

MA 60

MA 120

S/N ratio	70 dBu	
Frequency response	50 Hz – 15 kHz	
Indicators	Power indicator, output level meter	
Output	4Ω - (15.5V) 25V - (10.5Ω) 70V - (83 Ω), 100V - (170 Ω)	4Ω - (22V) 25V - (5.2 Ω) 70V - (42 Ω), 100V - (830 Ω)
	TAPE OUT - 4.7K ohms, 0 dBu MOH OUT - 8 ohms 1W/ 600 ohms, 1V	
Dimensions	88.5mm(H) x 420mm(W) x 280mm(D)	
Weight	9.3kg	10.0kg

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.