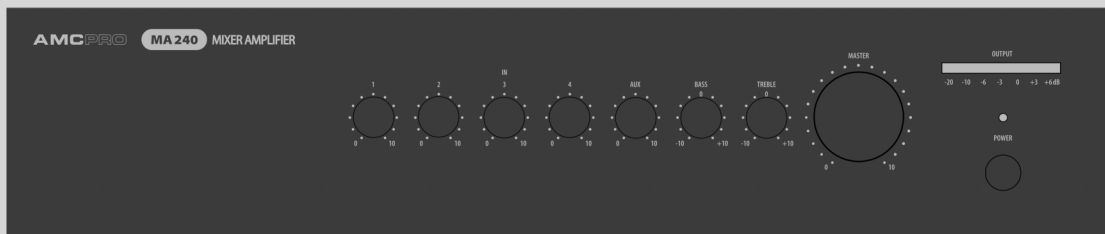




MA 240

Mixing amplifier



User manual

IMPORTANT SAFETY INSTRUCTIONS

CAUTION!

THIS PRODUCT UTILIZES A LASER. USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE. DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.



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. The product should be positioned so that proper ventilation is maintained.
5. The product should be located away from heat sources such as radiators, heat vents, or other devices (including amplifiers) 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. Replace the fuse only with one of the specified type, size and correct rating.
7. The power supply cord should be undamaged and never share an outlet or extension cord with other devices so that the outlet or extension cord's power rating is exceeded. Never leave device plugged into the outlet when it is not being used for a long period of time.
8. Care should be taken so that objects do not fall into, and liquids would not be spilled through, the enclosure's openings.
9. The product should be serviced by qualified service personnel if:
 - The power supply cord 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.

No user serviceable parts inside.

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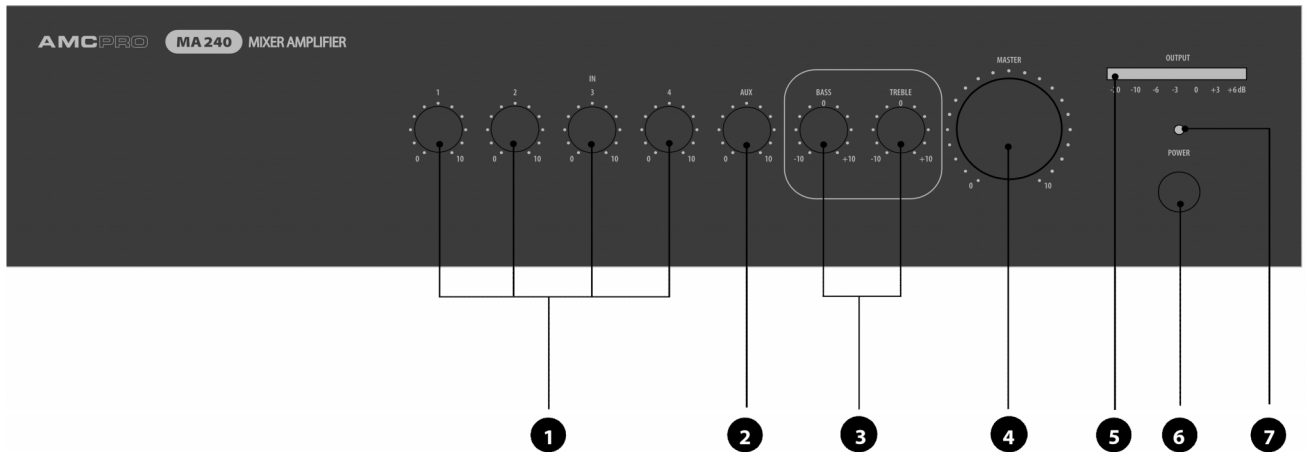
Introduction

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.
- First XLR input – priority input.
- Switchable phantom power on each XLR input.
- AUX in and REC out connectors.
- Preamplifier out and amplifier in connectors
- DC 24V input connector for external power supply.
- Tone control.
- Output level indicator.

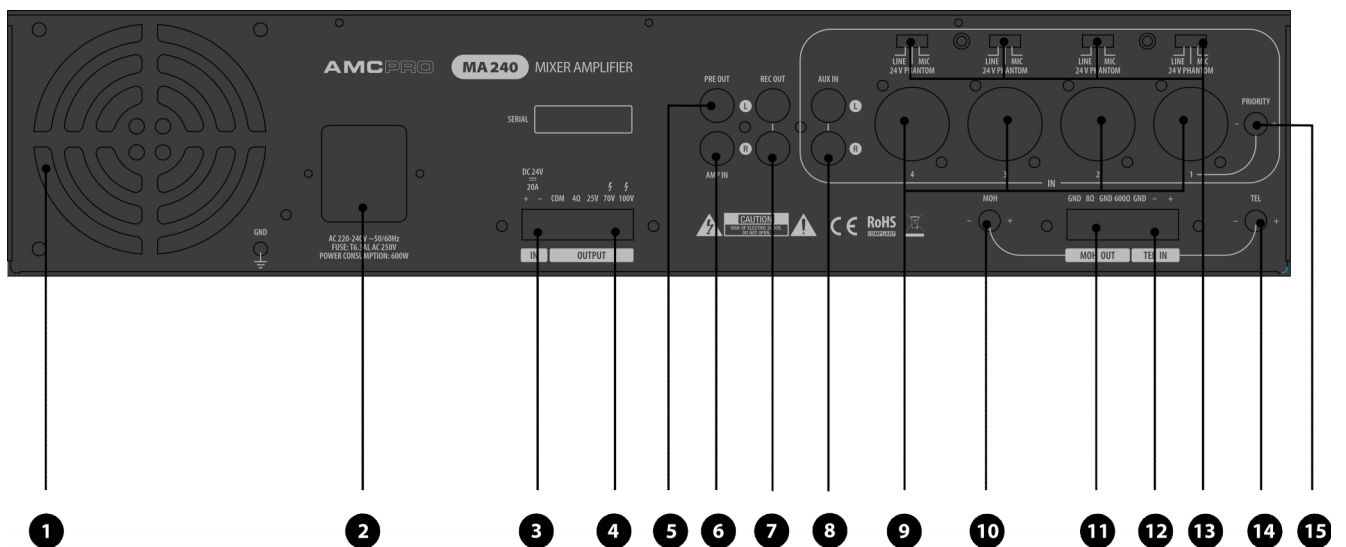
Front Panel



1. XLR inputs level control
2. AUX input level control
3. Tone control
4. Master volume

5. Output level indicator
6. Power switch
7. Power indicator

Rear Panel



1. Ventilation holes
2. Power connector and T6.3AL AC fuse
3. +24V DC terminal
4. Output terminal
5. Preamplifier output
6. Input to power amplifier stage
7. Stereo RCA REC output
8. Stereo RCA AUX input

9. Balanced XLR inputs
10. Music on hold level control
11. Connector for MOH equipment
12. TEL input
13. Gain and phantom power selector
14. TEL input gain control
15. Priority control

Functions description

Front panel:

1. 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.

2. AUX INPUTS LEVEL CONTROL

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

3. 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.

4. MASTER VOLUME

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

5. 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.

6. POWER INDICATOR

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

7. 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.

Rear panel:

1. VENTILATION HOLES

To ensure proper amplifiers cooling leave these ventilation's holes unblocked. Blocked ventilation's holes can be reason of amplifiers damage.

2. POWER CONNECTOR AND AC FUSE

Power connector is designed for main powers connecting to amplifier. This connector is combined with fuse holder and 6.3A 250V fuse inside.

3. +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. 24V DC Current - 20A.

4. OUTPUT TERMINAL

Output terminal is designed to connect audio line to amplifier. There are available 4 types of output: low impedance 4 Ω output, 25 V, 70 V and 100 V outputs for audio line. Please find some connection examples below in this user manual.

5. 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 or limiter.

6. INPUT TO POWER AMPLIFIER STAGE

This is line level input directly to device power amplifier. Preamplifier output and amplifier input are designed to insert signal processor such as equalizer or limiter.

7. REC OUTPUT

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

8. AUX INPUT

Line level stereo RCA input. AUX input allows to connect the line level audio, input level can be adjusted by using AUX knob, located in the front panel.

9. 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.

10. MUSIC ON HOLD LEVEL CONTROL

This rotary knob allows adjusting volume level in the MOH output.

11. CONNECTOR FOR MOH EQUIPMENT

1W 8Ω and 0dB 600Ω outputs are designed for music on hold.

12. TEL INPUT

Emergency input (from PBX station etc). The volume of this input can be controlled by level knob. This knob is located near the TEL input connectors.

13. 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 connected.

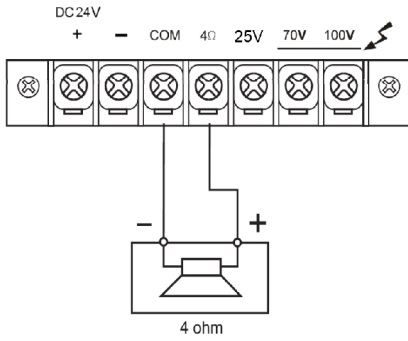
14. TEL INPUT GAIN CONTROL

This rotary knob allows adjusting gain level in the TEL input.

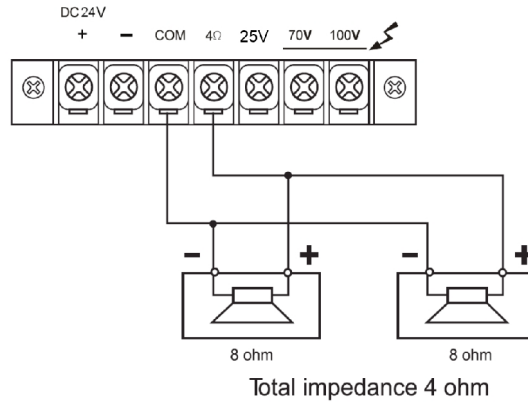
15. PRIORITY

Input 1 can be set as priority input. To set priority, please turn priority potentiometer to the right until the end. To deactivate priority turn to the left until the end.

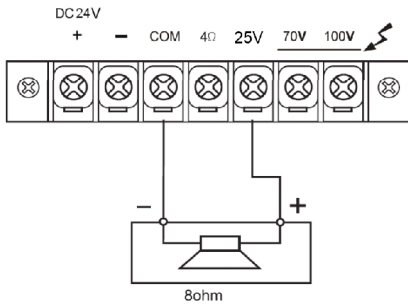
Output terminal



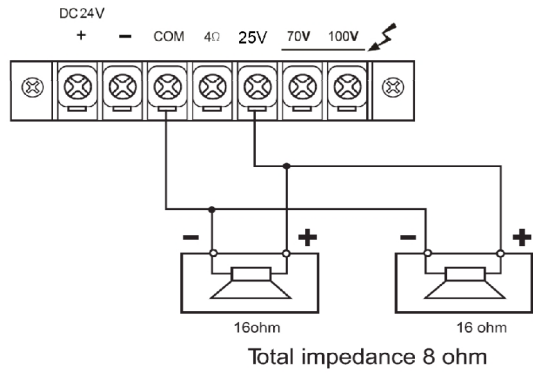
Connecting the speakers to 4 ohm output



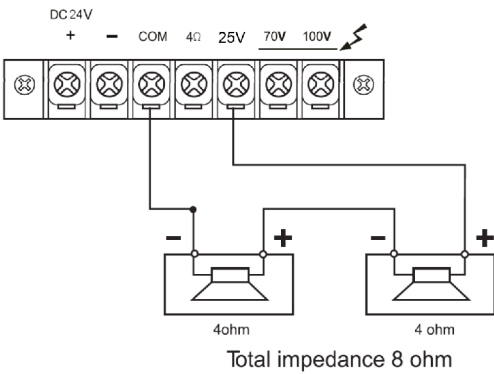
Total impedance 4 ohm



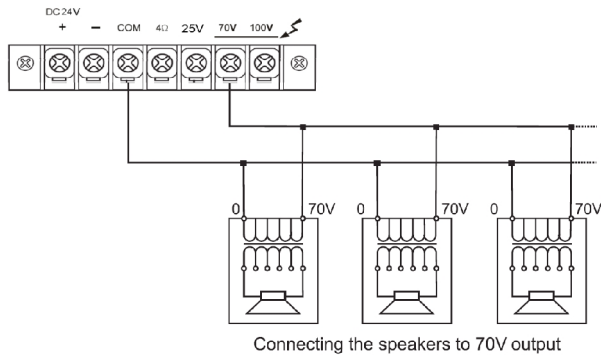
Connecting the speakers to 8 ohm output



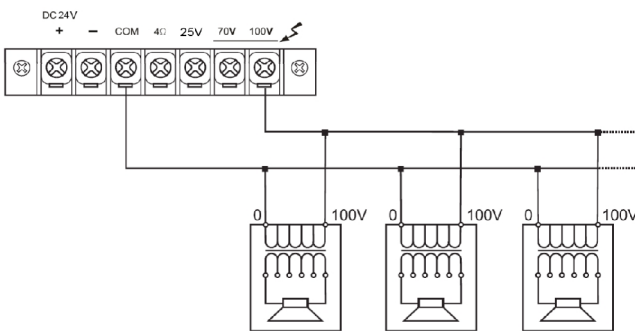
Total impedance 8 ohm



Total impedance 8 ohm



Connecting the speakers to 70V output



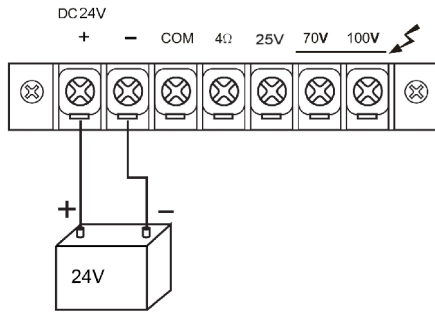
Connecting the speakers to 100V output

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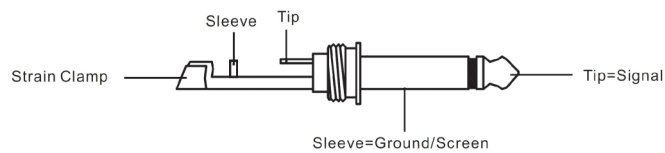
Controls and connections

Each of the amplifier channels (4 Ω, 25V, 70V, 100V) 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.

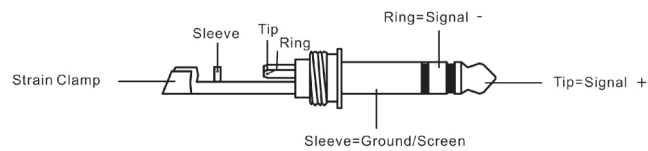
There is possibility to connect external power supply, external battery etc. Please find the connection example.



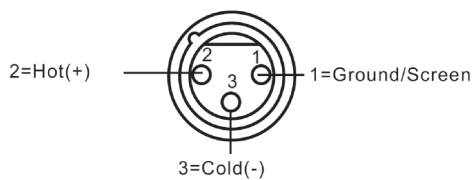
Connectors



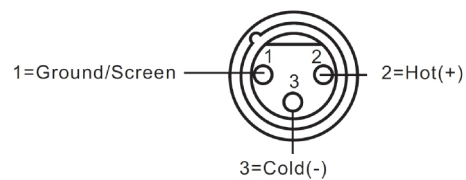
TS connector



TRS connector



XLR male connector



XLR female connector



RCA connector

Cable wiring examples



Cable to balanced input from balanced output. TRS connectors.



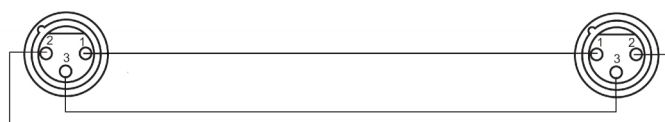
Cable to unbalanced input from balanced output. TRS and TS connectors.



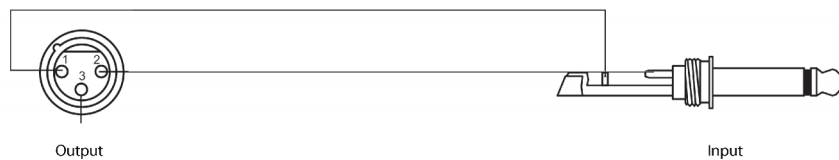
Cable to balanced input from unbalanced output. TS and TRS connectors.



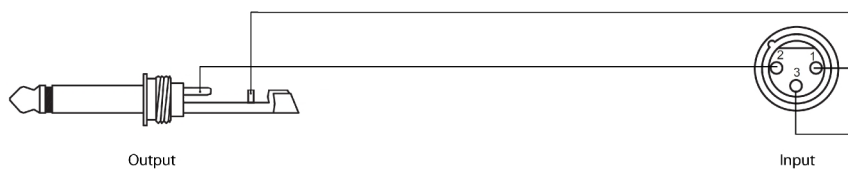
Cable to unbalanced input from unbalanced output. TS connectors.



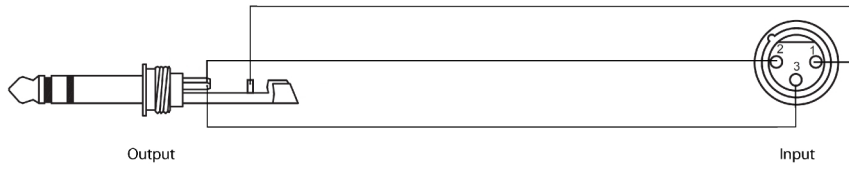
Cable to balanced input from balanced output. XLR connectors.



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



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



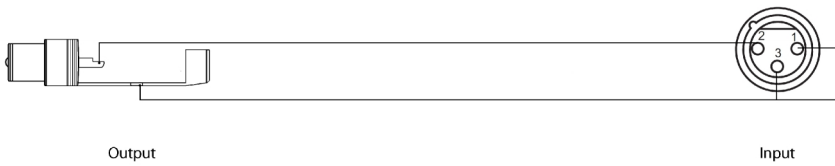
Cable to balanced input from balanced output. TRS and XLR connectors.



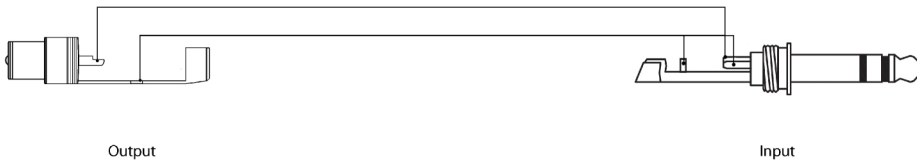
RCA cable.



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



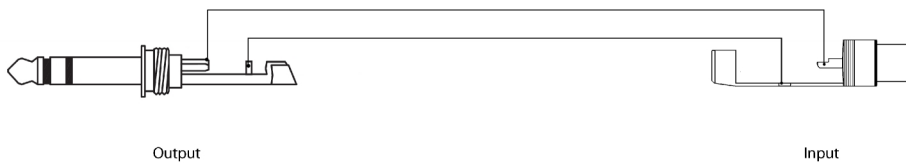
Cable to balanced input from RCA output. RCA and XLR connectors.



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 240
Power supply	AC 230 V, 50 Hz or 24 V DC
Fuses	Fuse for AC power: 6.3A, 250V, Ø 5.2x20mm.
Output power	240 W
AC power consumption	600 W
Total harmonic distortions	< 1 %
Priority	Input 1
Input sensitivity	Line -8 dBu MIC -50 dBu AUX -4 dBu
S/N ratio	80 dBu
Frequency response	80 Hz – 16 kHz
Indicators	Power indicator, output level meter
Output	4Ω - (31 V) 25V - (2.6 Ω) 70V - (20.5 Ω), 100V - (41 Ω)
	REC OUT - 4.7K ohms, 0 dBu MOH OUT - 8 ohms 1W/ 600 ohms, 1V
Dimensions	88mm(H) x 420mm(W) x 330mm(D)
Weight	12.8 kg