

COM104/108

User Manual



www.audac.eu

ADDITIONAL INFORMATION

This manual is put together with much care, and is as complete as could be on the publication date. However, updates on the specifications or functionality may have occurred since publication. To obtain the latest instruction manual or obtain additional product information, please visit the product page on www.audac.eu.

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Introduction

Public address mixing amplifier

The COM104/108 are compact but versatile public address mixing amplifiers, offering solutions for small to medium size audio systems in commercial installations. Typical applications are background music systems in retail stores, bars, restaurants and office buildings.

The compact and simple design allows installation in any location and operation through any possible user.

The amplifiers are designed using Class-D amplifier technology and delivers an output power up to 80 Watt (40 Watt for COM104) to constant voltage (100V and 70V) or low impedance (4 Ohm) audio systems. A switch mode power supply allows compatibility with a wide variation of mains voltages for global compatibility.

A stereo line input allows connection for a wide variation of audio sources such as media players, radio tuners, internet audio players, ... and many more. A balanced mic / line input allows connection for an announcement microphone with compatibility for condenser microphones using the integrated phantom power supply (15V). A priority switch overrides the background music when enabled, and compatibility with voice file players is guaranteed by the wide gain adjustment possibility (0 dB – +50 dB).

Desktop installation or mounting in an equipment rack using (optionally available) mounting adapters is possible. The half 19" rackspace enclosure allows single installation in a 10.5" equipment rack, or side-by-side (two devices) in a 19" equipment rack.

Precautions

READ FOLLOWING INSTRUCTIONS FOR YOUR OWN SAFETY

ALWAYS KEEP THESE INSTRUCTIONS. NEVER THROW THEM AWAY

ALWAYS HANDLE THIS UNIT WITH CARE

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

NEVER EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, ANY DRIPPING OR SPLASHING LIQUID. AND NEVER PLACE AN OBJECT FILLED WITH LIQUID ON TOP OF THIS DEVICE

NO NAKED FLAME SOURCES, SUCH AS LIGHTED CANDLES, SHOULD BE PLACED ON THE APPARATUS

DO NOT PLACE THIS UNIT IN AN ENCLOSED ENVIRONMENT SUCH AS A BOOKSHELF OR CLOSET. ENSURE THERE IS ADEQUATE VENTILATION TO COOL THE UNIT. DO NOT BLOCK THE VENTILATION OPENINGS.

DO NOT STICK ANY OBJECTS THROUGH THE VENTILATION OPENINGS.

DO NOT INSTALL THIS UNIT NEAR ANY HEAT SOURCES SUCH AS RADIATORS OR OTHER APPARATUS THAT PRODUCE HEAT

DO NOT PLACE THIS UNIT IN ENVIRONMENTS WHICH CONTAIN HIGH LEVELS OF DUST, HEAT, MOISTURE OR VIBRATION

THIS UNIT IS DEVELOPED FOR INDOOR USE ONLY. DO NOT USE IT OUTDOORS

PLACE THE UNIT ON A STABLE BASE OR MOUNT IT IN A STABLE RACK

ONLY USE ATTACHMENTS & ACCESSORIES SPECIFIED BY THE MANUFACTURER

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME

ONLY CONNECT THIS UNIT TO A MAINS SOCKET OUTLET WITH PROTECTIVE EARTHING CONNECTION

THE MAINS PLUG OR APPLIANCE COUPLER IS USED AS THE DISCONNECT DEVICE, SO THE DISCONNECT DEVICE SHALL BE READILY OPERABLE

USE THE APPARATUS ONLY IN MODERATE CLIMATES



CAUTION – SERVICING

This product contains no user serviceable parts. Refer all servicing to qualified service personnel. Do not perform any servicing (unless you are qualified to)



EC DECLARATION OF CONFORMITY

This product conforms to all the essential requirements and further relevant specifications described in following directives: 2014/30/EU (EMC) and 2014/35/EU (LVD)



WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The WEEE marking indicates that this product should not be disposed with regular household waste at the end of its life cycle. This regulation is created to prevent any possible harm to the environment or human health.

This product is developed and manufactured with high quality materials and components which can be recycled and/or reused. Please dispose this product at your local collection point or recycling centre for electrical and electronic waste. This will make sure that it will be recycled on an environmentally friendly manner, and will help to protect the environment in which we all live.

CAUTION

The symbols shown are internationally recognized symbols that warn about potential hazards of electrical products. The lightning flash with arrowpoint in an equilateral triangle means that the unit contains dangerous voltages. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the users manual.



These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

Chapter 1

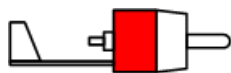
Pin connections and connectors

CONNECTION STANDARDS

The in- and output connections for AUDAC audio equipment are performed corresponding to international wiring standards for professional audio equipment.

Cinch (RCA):

For unbalanced line input connections

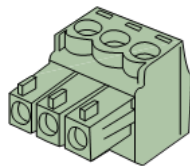


Tip: Signal

Sleeve: Ground

3-Pin Terminal block:

For balanced signal input connections

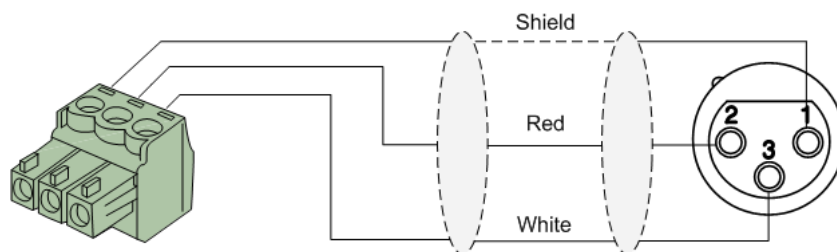


Left: Signal – (XLR Pin 3)

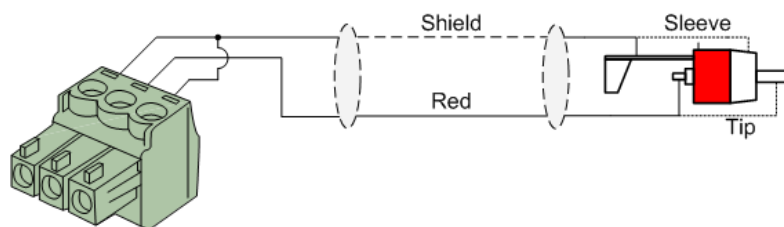
Center: Signal + (XLR Pin 2)

Right: Ground (XLR Pin 1)

For balanced signal input connections



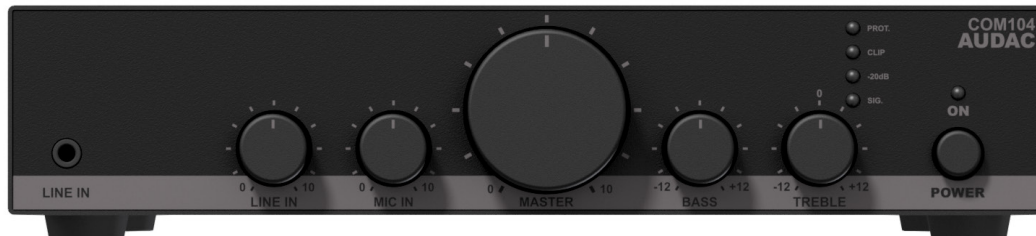
For unbalanced signal input connections



Chapter 2

Front & rear panel

Front panel overview



Front panel description

3.5 mm Jack input:

A 3.5 mm jack connection is located on the left side of the front panel. This easy accessible input is an unbalanced stereo line input whereto any portable audio device (such as laptop, smartphone or tablet) with 3.5 mm jack audio output can be connected. It is combined with the line input on the rear amplifier side (connected by RCA connectors), meaning the rear side input is disabled when the front 3.5 mm jack is connected.

Input mixing controls:

Using the input mixing controls, the level for each individual input (Line in or Mic in) can be adjusted.

Output master control:

The output section contains a master volume control, two band tone control and indicator LED's. The master volume control allows regulation of the overall output level, while two–band tone control allows bass / treble adjustment within a range of ± 12 dB and the indicator LED's indicate the overall output level and status of the amplifier (Signal / -20 dB / Clip / Protect).

Power switch:

Allows to power the system ON and OFF. The blue indicator LED illuminates when switched on.

Compact half 19" rackspace enclosure:

The amplifiers are housed in a compact half 19" rackspace enclosure which can be used for desktop installation or mounted in an equipment rack using (optionally available) mounting adapters. The half 19" rackspace enclosure allows single installation in a 10.5" equipment rack, or side–by–side (two devices) in a 19" equipment rack.

Rear panel overview



Rear panel description

AC Power inlet with fuse:

The mains power supply (100–240V AC – 50/60 Hz) has to be applied to this AC power inlet. The connection is made by an IEC C14 power connector.

Priority mute contact:

A priority mute contact mutes the music at presence of a contact closure between both terminals. When priority on the microphone input (Mic in) is enabled, the applied signal will override the muting which allows emergency announcements or voice messages. This contact is convenient for situations where a separate emergency system is installed and complete background music muting is required at occasion of a (fire) alarm. The emergency system contact outputs can be connected to this contact input.

Loudspeaker output connections:

Output connections for both low impedance (4Ω) and constant voltage distributed audio systems are provided. These outputs are connected using a 4-pin terminal block connection, with various connection terminals for different output voltage / impedance. More information about loudspeaker output connections is described in a further chapter of this instruction manual.

Unbalanced stereo line input:

An unbalanced line level input source (e.g. media-players, radio tuners, ...) can be connected to the line input which is implemented through RCA connectors. It is fitted with a gain control potentiometer whereby the input sensitivity can be controlled within a range of +4 dB ~ -20 dB.

NOTE

The gain control potentiometers for the RCA unbalanced stereo line input (rear) also affects the level for the 3.5 mm jack input connection (front). When switching between front and rear input, it is recommended to configure both connected audio sources with equal output levels to allow easy switching (without adjusting the rear input gain).

Balanced microphone input:

Balanced mono sources can be connected to the microphone input which is implemented using a terminal block connector. It is fitted with a gain control potentiometer whereby the sensitivity can be adjusted within a range of 0 dB ~ -50 dB which allows connection for both microphone or line level audio sources (e.g. voice file announcement systems).

A phantom power switch enables 15 Volts phantom power supply for powering condenser microphones and a priority switch eliminates other connected audio sources once a signal is present on this input. When priority enabled, this inputs also overrides the priority mute.

Chapter 3

Setting up the system

ATTENTION

Make sure the power of the device is turned OFF before any connections or wiring adjustments are made. Disregarding this rule can lead to permanent damage of the equipment.

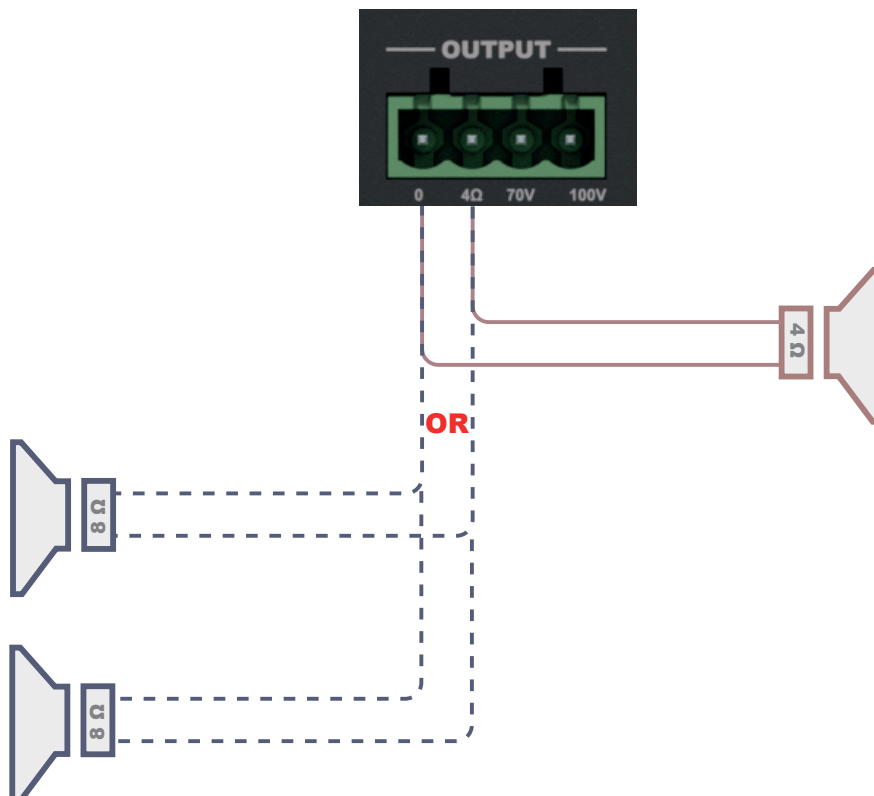
1) Connecting the loudspeakers

The loudspeakers should be connected to the 4-pin terminal block connector on the rear panel of the amplifier. Selection can be made between low impedance (4Ω) or constant voltage (100V / 70V) depending on project requirements. The corresponding terminals shall be connected depending of the loudspeakers and installation type. It is only allowed to use one (either constant voltage or low impedance) of both options at a time.

The table below shows the output voltage, impedance and maximum power load for each amplifier model.

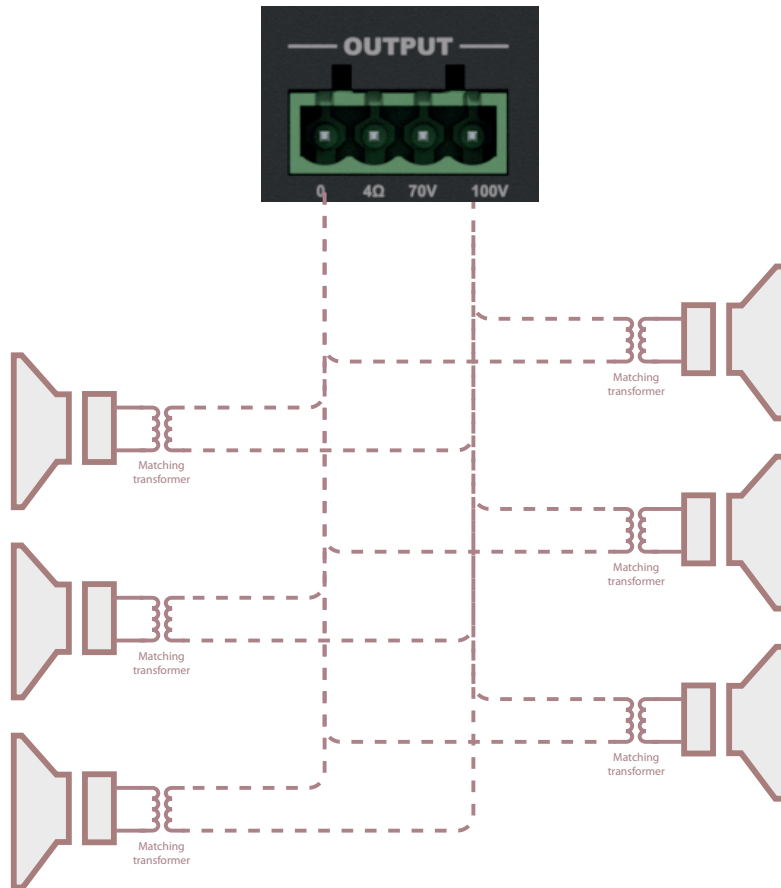
| | | | | |
|--------|---------------|--------------|--------------|---------|
| COM104 | 4 Ω / 12.65 V | 125Ω / 70 V | 250Ω / 100 V | 40 Watt |
| COM108 | 4 Ω / 17.89 V | 62.5Ω / 70 V | 125Ω / 100 V | 80 Watt |

For operation in low impedance (4 ohm) mode, any loudspeaker (or combination) with an impedance higher than 4Ω can be connected.



Example diagram low impedance connections

For operating using constant voltage (100V / 70V) audio distribution systems, all speakers shall be connected in parallel on the corresponding output terminals, non exceeding the maximum wattage / minimum impedance of the amplifier.



Example diagram constant voltage connections

2) Connecting the audio sources

The next step is making the input signal connections. Depending of the source type and signal level (microphone or line), they need to get connected to the matching inputs.

Before connecting, turn all the channel input and master volume controls on the front panel of the amplifier fully counterclockwise (to their minimum setting) and put the gain control trimmers on the rear panel in a central position. Then connect the sources to the corresponding inputs and turn on the amplifier and the connected audio sources. After approximately five seconds, the protection LED will stop illuminating.

Apply a signal to the inputs as it will be used in normal operation circumstances and turn the channel input level control up about 50%. Slowly raise the master volume control till a certain level until the desired sound level is achieved. Depending of the output level of the connected music sources, the input gain might need adjustment. Adjust these trimmers on the rear panel until the desired level is achieved.

For the best signal to noise ratio, the amplifier shall be set with the master volume controller setting near maximum position and the peak signal indicator is illuminating frequently, without illuminating the clip LED indicator. If the signal sounds too loud or distorted, use the input level controls to attenuate as necessary to achieve the desired output level.

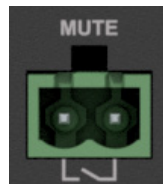
3) Priority & phantom power

The microphone input connection contains a priority (PRIO) and phantom power (PHNTM) switch, whereby these functions can be enabled and disabled. When priority is switched on, other connected audio sources will be eliminated once a signal is present on this input. It also overrides the priority mute when enabled. The phantom power switch enables 15 Volts phantom power supply for powering condenser microphones.



4) Priority mute contact

A priority mute contact allows complete muting of background music at presence of a contact closure between both terminals. This contact is convenient for situations where a separate emergency system is installed and complete background music muting is required at occasion of a fire alarm. The emergency system contact outputs can be linked to this contact input.



Chapter 4

Additional information

Technical specifications

| | | | | |
|------------|-----------------------------------|-------|-------------|---------------------------------------------------------------------------------|
| Inputs | Mic in | | Type | Balanced microphone |
| | | | Connector | 3-pin terminal block ~ 3.81 pitch |
| | | | Sensitivity | 0 dB ~ -50 dB |
| | | | Other | Phantom power (15V DC) Priority |
| | Line in | | Type | Unbalanced stereo line |
| | | | Connector | RCA (2x) |
| | | | Sensitivity | +4 dB ~ -20 dB |
| | Front line input | | Type | Unbalanced stereo line |
| | | | Connector | Combined with Line in (RCA) 3.5 mm stereo jack |
| | Priority mute contact | | Type | Priority mute |
| | | | | 2-pin terminal block ~ 5.08 mm pitch |
| Outputs | Volt / Imp | 4 Ω | COM104 | 12.65 V |
| | | | COM108 | 17.89 V |
| | | 100 V | COM104 | 250 Ω |
| | | | COM108 | 125 Ω |
| | | 70 V | COM104 | 125 Ω |
| | | | COM108 | 62.5 Ω |
| | Connector | | | 4-pin terminal block ~ 5.08 mm pitch |
| | Frequency response | | | 20 Hz – 20 kHz |
| | Signal to Noise ratio | | | > 90 dB |
| | Total Harmonic Distortion + Noise | | | < 0.5% |
| | Crosstalk | | | > 70 dB |
| Controls | | | | Master volume control Two band tone control (output) Input volume control |
| Indicators | | | | Power Protect Clip -20 dB Signal |

| | | | |
|----------------------|-----------------|------------------|-----------------------------------------------------------------------------|
| Protection | | | DC–Short Circuit Over Heating Over Load |
| Cooling system | | | Convection cooled |
| Amplifier technology | | | Class–D |
| Power supply | | Type Range | Switching mode 100–240 V AC – 50/60 Hz |
| Power consumption | Idle | | 3.5 Watt |
| | 1/3 Rated power | COM104 COM108 | 24 Watt 46 Watt |
| Dimensions | | | 218 x 44 x 300 mm |
| Unit height | | | 1 HE |
| Weight | | COM104 | 2.2Kg |
| | | COM108 | 2.35 Kg |
| Optional accessories | | | MBS310 Rack mount kit For single (10.5”) and side–by–side (19”) mounting |

