

AEQ AM-03

Self-powered Stereo Audio Monitor

USER'S MANUAL

ED. 10/06



AEQ

A.E.Q., S.A. fabricante de este equipo, es “Empresa Registrada” de acuerdo con la norma UNE EN-ISO-9001 por AENOR con el nº:ER-080/1/96

INDEX

1. MISCELLANEOUS

- 1.1. GENERAL PRECAUTIONS
 - 1.1.1. READ ALL THE INSTRUCTIONS
 - 1.1.2. POWER AND GROUND CONNECTIONS
 - 1.1.3. PROTECTIONS AGAINST VOLTAGE FLUCTUATIONS
 - 1.1.4. WATER AND HUMIDITY
 - 1.1.5. VENTILATION AND AMBIENCE
 - 1.1.6. MAINTENANCE
 - 1.1.7. GUARANTEE

2. POWER REQUIREMENTS

- 2.1. GENERAL
 - 2.1.1. CONNECTING THE EQUIPMENT TO MAINS
 - 2.1.2. EQUIPMENT POWER ON

3. AUDIO CONNECTIONS

- 3.1. GENERAL
 - 3.1.1. AUDIO INPUT CONNECTIONS
 - 3.1.2. AUDIO OUTPUT CONNECTIONS

4. OPERATING INSTRUCTIONS

- 4.1. GENERAL
- 4.2. OPERATING THE EQUIPMENT
 - 4.2.1. GAIN CONTROL
 - 4.2.2. L/R BALANCE SELECTOR
 - 4.2.3. INPUT SELECTION
- 4.3. AUDIO PHASE METERING
 - 4.3.1. GENERAL
 - 4.3.2. LEFT CHANNEL SIGNAL
 - 4.3.3. RIGHT CHANNEL SIGNAL
 - 4.3.4. STEREO SIGNAL IN PHASE
 - 4.3.5. MONOAUURAL SIGNAL IN PHASE
 - 4.3.6. STERIO SIGNAL OUT OF PHASE
 - 4.3.7. MONOAUURAL SIGNAL OUT OF PHASE
- 4.4. MONOTORING WITH HEADPHONES
 - 4.4.1. HEADPHONES CONNECTION

5. DESCRIPTION OF AM-03 FRONT AND BACK PANNELS

- 5.1. FRONT PANEL
- 5.2. BACK PANEL

6. TECHNICAL SPECIFICATIONS

- 6.1. TECHNICAL SPECIFICATIONS OF AM-03

1. MISCELLANEOUS

1.1. General precautions

The following measures of safety and precaution should be observed during every moment of operation and maintenance of this equipment. The erroneous handling or ignoring these instructions, could alter in a serious way the functioning and performance of the equipment. **AEQ** will not be liable to any injuries or damages incurred by an incorrect handling of the equipment.

1.1.1. Read all Instructions

Before operating this equipment and connecting it to any external power source, it is absolutely necessary to thoroughly read all the instructions contained in this manual, and to do so in the established order. This way, you will get the best performance from your equipment from the very start, and at the same time, you will avoid any incorrect handling or operation that could result in damage to the same.

1.1.2. Power and Ground connection

To reduce the electrical shock risk, the AM-03 must be connected to ground. The unit is supplied with the ground plug connector. If necessary to change the plug, the ground wire is the yellow/green one.

1.1.3. Protection against voltage fluctuations

On locations where power fluctuations are frequent, an external protection device is needed to guarantee that the voltage required for the unit is the appropriate one.

1.1.4. Water and humidity

It is strongly recommended to not use the equipment on locations where there exist a risk of water penetrating in the interior of the equipment, i.e. rain, mist, wet floors, etc. Neither is it recommended to use the equipment on locations with an elevated level of atmospheric humidity, whereas this frequently is condensed inside the equipment.

1.1.5. Ambience and Ventilation

The equipment should never be placed on or near a source of heat. The use of electronic or electrical devices close to a flame or inflammable gases supposes a danger that should be avoided at all cost.

All ventilation grids must be un-obstructed to allow the proper circulation and let the hot air out.

1.1.6. Maintenance

The maintenance operations of this units should be carried out exclusively by qualified technical service. **AEQ** is not liable to any damage caused to the equipment due to any maintenance operation without our authorization, neither to the damage that an equipment repaired without such authorization could inflict to other equipment or persons.

Be aware that this unit contains very high voltages, dangerous presenting the risk of electric shock. The installations of this unit must be fulfilled by qualified technical service, just as all internal manipulation.

1.1.7. Guarantee

AEQ guarantees that this product has been designed and manufactured under a certified Quality Assurance System and according to the ISO 9001/2002 Standard. AEQ therefore Guarantees that the necessary test protocols to assure the proper operation and the specified technical characteristics of the product have been followed and accomplished.

This includes that the general protocols for design and production and the particular ones for this product are conveniently documented.

1.- The present guarantee does not exclude or limit in any way any legally recognized right of the client.

2.- The period of guarantee is defined to be twelve natural months starting from the date of purchase of the product by the first client. To be able to apply to the established in this guarantee, it is compulsory condition to inform the authorized distributor or -to its effect- an AEQ Sales office or the Technical Service of AEQ within thirty days of the appearance of the defect and within the period of guarantee, as well as to facilitate a copy of the purchase invoice and serial number of the product.

It will be equally necessary the previous and expressed conformity from the AEQ Technical Service for the shipment to AEQ of products for their repair or substitution in application of the present guarantee. In consequence, return of equipment that does not comply with these conditions will not be accepted.

3.- AEQ will at its own cost repair the faulty product once returned, including the necessary labour to carry out such repair, wherever the failure is caused by defects of the materials, design or workmanship. The repair will be carried out in any of the AEQ authorized Technical Service Center. This guarantee does not include the freight charges of the product to or from such Authorized Technical Service Center.

4.- No Extension of the Guarantee Period for repaired product shall be applied. Neither shall a Substituted Products in application of this Guarantee be subject to Guarantee Period Extension.

5.- The present guarantee will not be applicable in the following situations:

Improper use or Contrary use of the product as per the User or Instruction Manual; violent manipulation; exhibition to humidity or extreme thermal or environmental conditions or sudden changes of such conditions; electrical discharges or lightning; oxidation; modifications or not authorized connections; repairs or non-authorized disassembly of the product; spill of liquids or chemical products.

6.- Under no circumstances, whether based upon this Limited Guarantee or otherwise, shall AEQ, S.A. be liable for incidental, special, or consequential damages derived from the use or from the impossibility of using the product.

AEQ shall not be liable for loss of information in the disks or data support that have been altered or found to be inexact, neither for any accidental damage caused by the user or other persons manipulating the product.

2. POWER REQUIREMENTS

2.1. General

The description of the front and back panels of the equipment can be found on the Section 5. Please, unfold the graphic cart to obtain a general view of equipment controls and its connections.

2.1.1. Connecting the equipment to mains

The **AM-03** is prepared to operate with voltages between 90 to 250V AC without any previous operation. The unit's mains connector socket has a fuse box with a 500mA fuse and a spare fuse.

Note: The **AM-03** mains cable is delivered with the European normative mains plug and other with the American normative. In some countries, it could be necessary to replace this plug with one that complies with the local standards. If this could be your case, please, replace the plug before operation.

2.1.2. Equipment power on

Once checked and modified, following the instructions in Section 2.1.1., the equipment is ready to be connect to mains. Before connecting it, please, turn the power switch to off (fig. 3).

Now turn the power switch on . If all the instructions have been followed properly, the power on led will illuminate, and the same will happened with the central led of the led audio phase meter (fig. 4).

The process of preparing and connecting the equipment to mains has finished. Turn off the power of the unit and proceed with the connection of the audio signals as indicated in Section 3.

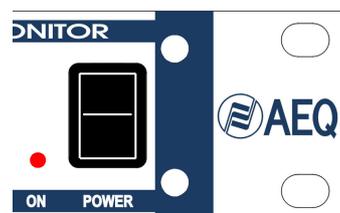


FIGURE 3

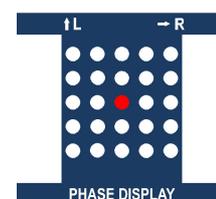


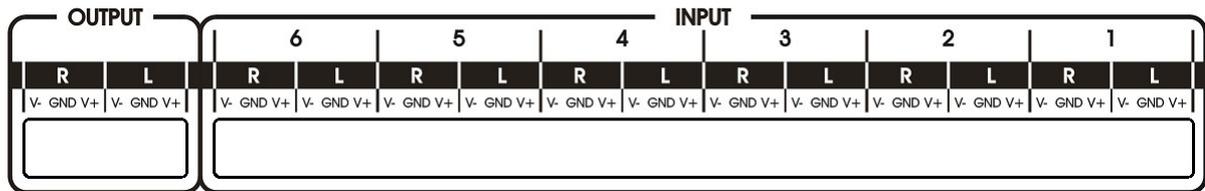
FIGURE 4

3. AUDIO CONNECTIONS

3.1. General

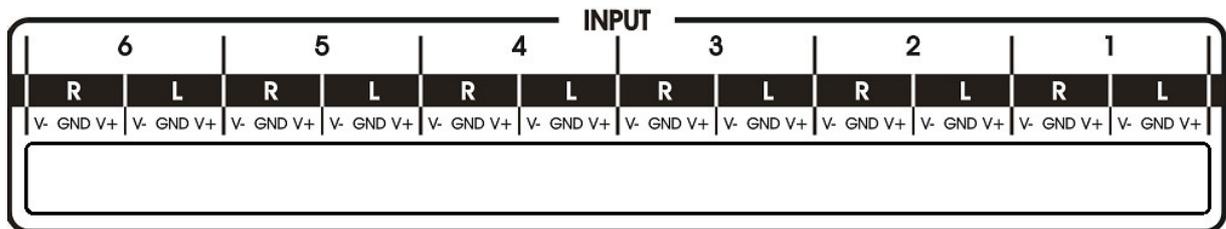
The **AM-03** is equipped, in the back panel, with six stereo audio inputs and a parallel output that allow to direct the audio signal that is being monitored to, for example, metering instruments, patch panel, etc. For this connections, female connector are supplied.

In addition, this equipment features a frontal headphone output to monitor directly the selected audio output.



3.1.1. Audio input connections

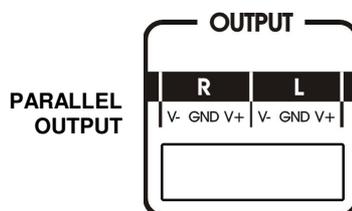
The six connections are numbered from 1 to 6. The left and right channels are labeled **R** and **L**, respectively, as well as the signal of each connector's pin, **V+** for the positive polarity, **V-** for the negative polarity and **GND** for the ground.



3.1.2. Audio output connections

The equipment has one stereo audio output in the back panel that uses three pin connectors to monitor the selected audio signal with a measurement equipment or similar. To use this output, the equipment must to be on.

In the front panel, there is a headphone output for a direct monitoring of the selected output.



4. OPERATION INSTRUCTIONS

4.1. General

The **AM-03 Self Amplified Audio Monitor** has been designed in accordance with the actual needs of the operators and audio technicians that carry out their labour in TV and radio broadcasting controls, mobile production units and retransmissions, VTR rooms, cinema control cabinets, multi video systems, etc.

The **AM-03** allows stereo monitoring using a very small space. It includes five speakers fed by three way power amplifiers.

This design provides significant advantages offering high quality sound properly calibrated for operators working within a close audio range (between 30 to 90 cm). Also, the phase meter in the front panel is able to detect any signal out of phase, background noise, etc.

All the controls are located on the front panel of the equipment:

- Gain control
- Six stereo audio inputs selector
- Left or right channel and balance selector
- Headphones connector with automatic speaker disconnection.
- Phase meter
- On / Off switch with power led indicator

The **AM-03** provides innovative solutions to multiple audio monitoring problems, offering comparable functions to bigger monitors in one unit rack, saving rack space and gaining portability.

The magnetic shielding of the equipment allows top performances in environments next to video monitors without video image degradation.

4.2. Operating the equipment

4.2.1. Gain control

The gain control (6) of the unit allows adjusting the volume of the speakers or the headphones (1). The unit is equipped with a power limiter, factory adjusted to the maximum level admitted by the equipment.

4.2.2. L/R balance selection

The balance switcher (7) admits us to balance the signal between the left and right channels or, if necessary, using only one of this, turning the switch anti-clockwise for the left channel or clockwise for the right channel.

4.2.3. Audio Input selection

The switch (8) allows us to select one of the six stereo audio inputs that the unit is equipped with.

Remember that the input selected with this switch will also be present at the parallel output (12 – 13), as already mentioned in Section 3.1.2

4.3. Audio phase metering

4.3.1. General

The phase meter permits us to monitor the audio signal in phase. This can be done in stereo or only left or right channel respectively.

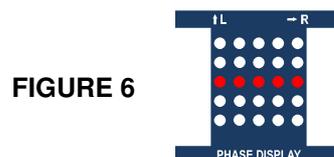
4.3.2. Left channel signal presence

In the case that the equipment only disposes of a signal proceeding from left channel, the phase meter will illuminate as shown in figure 5.



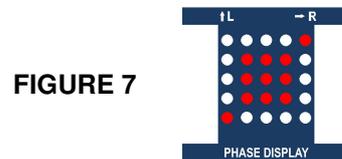
4.3.3. Right channel signal presence

In the case that the equipment only disposes of a signal proceeding from right channel, the phase meter will illuminate as shown in figure 6.



4.3.4. Stereo signal presence in phase

In the case the equipment is receiving an stereo signal in phase, the phase meter will present the following aspect (fig. 7).



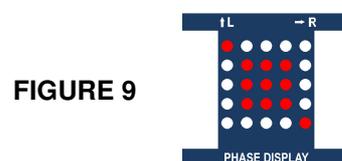
4.3.5. Monoaural signal presence in phase

In case that the signal present in both channels is monoaural, and it is in phase, the phase meter will present the aspect show in figure 8.



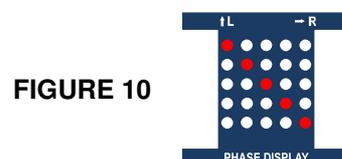
4.3.6. Stereo signal presence out of phase

In case that the signal received by the equipment is stereo, but out of phase, the display of the phase meter will have the aspect as in figure 9.



4.3.7. Monoaural signal presence out of phase

In the case that the signal received is monoaural, and out of phase, the display of the phase meter will have the aspect as shown in figure 10.



4.4. Headphones monitoring

4.4.1. Headphones connector

The headphones connector (1) gives the opportunity to carry out a direct monitoring. The disconnection of the speakers will be done automatically when the headphones jack is inserted on the connector. All the controls (gain, balance, etc.) will remain operative in this listening mode.

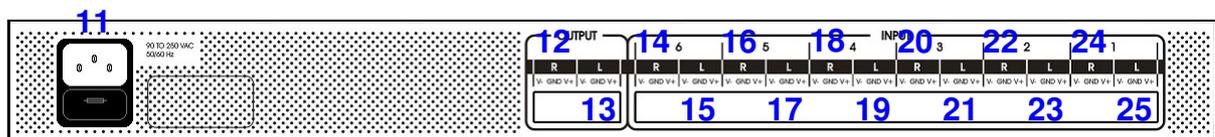
5. DESCRIPTION OF AM-03 FRONT AND BACK PANELS

5.1. AM-03 front panel



- 1.- Headphones connector.
- 2.- Left channel mid - high frequency stereo way.
- 3.- Phase meter.
- 4.- Monoaural low frequency way.
- 5.- Right channel mid - high frequency stereo way.
- 6.- Gain control.
- 7.- Left / Right and balance control.
- 8.- Stereo input selector (1, 2, 3, 4, 5 y 6).
- 9.- Power ON / OFF switch.
- 10.- Power indicator led.

5.2. AM-03 back panel



- 11.- Mains connector socket and fuse's box.
- 12.- Parallel audio output for the selected right channel input.
- 13.- Parallel audio output for the selected left channel input.
- 14.- Audio input number 6, right channel.
- 15.- Audio input number 6, left channel.
- 16.- Audio input number 5, right channel.
- 17.- Audio input number 5, left channel.
- 18.- Audio input number 4, right channel.
- 19.- Audio input number 4, left channel.
- 20.- Audio input number 3, right channel.
- 21.- Audio input number 3, left channel.
- 22.- Audio input number 2, right channel.
- 23.- Audio input number 2, left channel.
- 24.- Audio input number 1, right channel.
- 25.- Audio input number 1, left channel.

6. TECHNICAL SPECIFICATIONS

6.1. Technical specifications of AM-03

Inputs:	6 stereo inputs, selectable from the front panel, electronically balanced with RF filter. Impedance: > 100 KOhm. Nominal level: 0 dBv. Connectors: Male connector, 3 pole - pitch 5.08mm.
Outputs:	1 stereo parallel audio output to the selected input, with male connector, 3 pole - pitch 5.08mm 600 Ohm, stereo headphones connector female ¼" connector with automatic speaker disconnection.
Controls:	Input selector. Balance control. Gain control.
Metering:	Phase meter Left/Right by 25 led matrix in a 5 x 5 configuration.
Acoustic System:	Three way acoustic system: Low: Monoaural. 1 compression magnet-dynamic speaker. Mid: Stereo. 2 compression magnet-dynamic speaker. High: Stereo. 2 piezo-electric speakers. Limiter: Incorporated to protect speakers, adjusted to the optimal output power. Cross-over frequencies: Low - Mid: 600 Hz. Mid - High: 4 KHz. Frequency response: 65 Hz to 19 KHz. Harmonic distortion : < 0.1 %.
Power Requirements :	90 ~ 250 V AC, 50 - 60 Hz, 50 VA.
Dimensions:	Width: 483 mm (19"). Height: 44 mm (1 Unit rack). Depth: 365 mm (14.4").
Peso:	6.2 Kilograms.

Note: The technical specifications contained in this page are merely orientative. They are subject to change without previous advice.