

AE-1

Installation & User Guide v 6.0

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AE-1

Installation & User Guide

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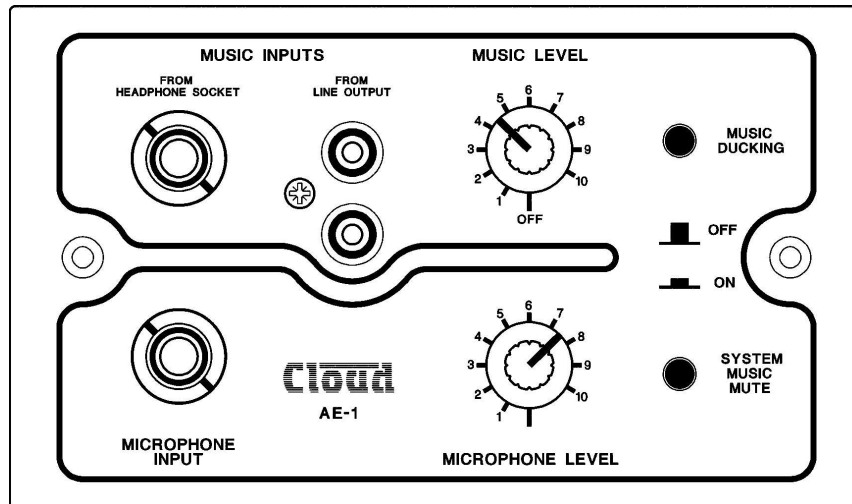
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1 Safety Notes

The Cloud AE-1 Remote Input Module must be fitted by a technically qualified person. Do not tamper with any part of the equipment unless you are qualified to do so. Before working on any piece of Cloud equipment turn the power off and remove the mains supply cable from the rear of the unit

2 General

The Cloud AE-1 is an active module with facilities for both line level and unbalanced microphone inputs.

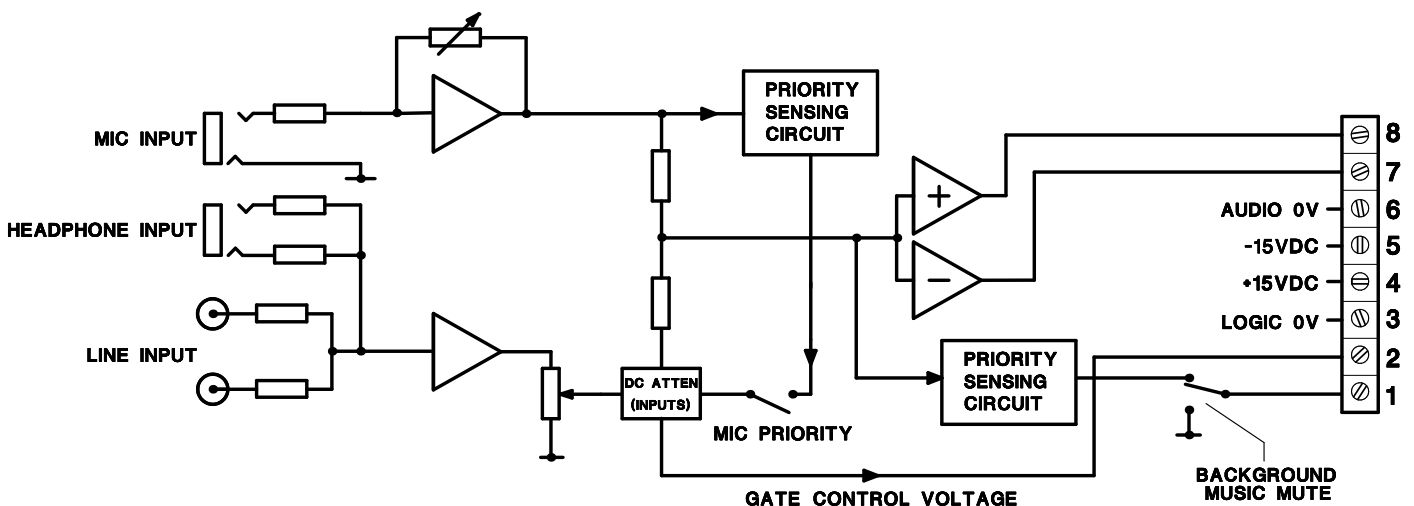


The AE-1 is compatible with all Cloud Z4 & Z8 mixers as well as the MPA-626 amplifier, and can be used for any application where local connection of a microphone and/or a music source signals is required. The prime application is the fitness suite where the aerobics instructor is required to connect their music source and/or radio microphone directly into the house system. In addition to the separate level controls for music and microphone signals, the user can select 'music ducking' to attenuate the music signals when the microphone is used and 'system music mute' to mute the background music. Both 'system music mute' and 'music ducking' are tamper proof and will operate only when a signal is detected within the AE-1.

3 AE-1A

The AE-1A is available for the American market. It has identical operation to the AE-1 but has been designed to fit a 1.5" deep US three-gang box. The front panel dimensions of the AE-1A are 4.5" x 6.38".

4 Block Diagram



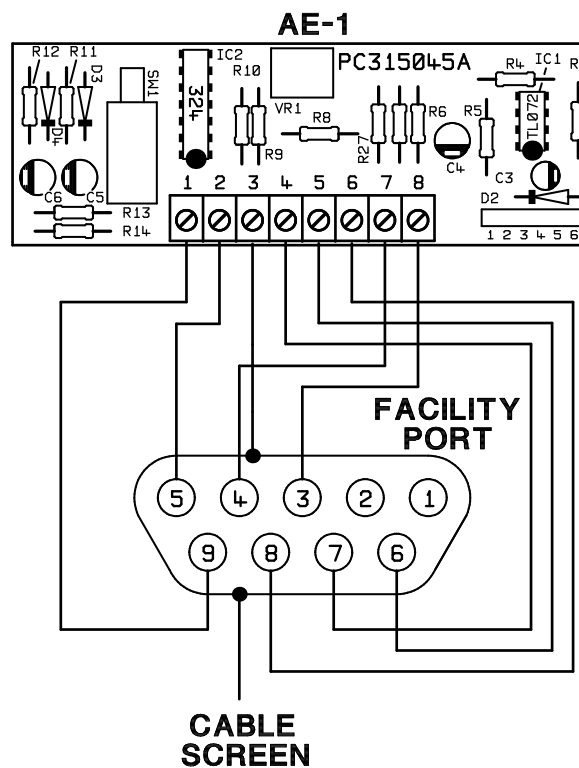
5 Installing an AE-1 Active Module

5a Hardware and Wiring Requirements

The Cloud AE-1 active module is the same physical size as a double UK electrical socket (13A Type) and can be mounted in the recessed back box provided or be surface mounted in a standard 35mm deep housing. The AE-1 should be connected to the facility input of the host mixer or amplifier using 8-Core cable with an overall screen. The AE-1 terminations are conventional screw terminals while the facility input on the host unit is a 9-Pin sub-D type connector (sub D-Type connector is supplied with the unit).

It is advised that you are vigilant when wiring the AE-1 as wiring conventions between old and new host units do vary. Since the AE-1 derives its power from the host unit, certain wiring errors can cause power supply problems resulting in temporary shutdown of the host mixer or amplifier; the unit can be reset by switching it off for 30 seconds. If a problem such as this is experienced, disconnect the facility connector and double check the wiring against the diagram, also note that we recommend a maximum cable length of 100m (328ft).

5b Connecting an AE-1

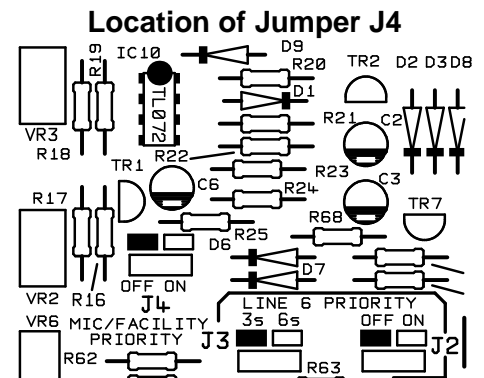


5c Configuring a Z4 or Z8 to an AE-1

Should you wish the mic signals from the mixer to override the AE-1 signals, set Jumper 'J4' on the zone board to the 'ON' position.

When setting the jumper(s) please ensure that you:

- Remove the mains cable from the rear of the product before removing the top panel
- Only reassemble the unit using bolts/screws identical to the original parts

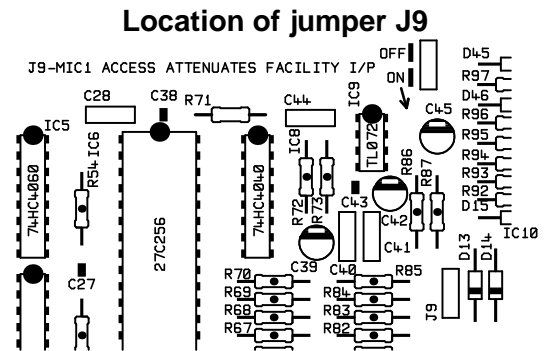


5d Configuring an MPA-626 to an AE-1

Should you wish the MPA-626 to override the AE-1 signals when Mic 1 is accessed, set jumper J9 to the 'ON' position.

When setting the jumper(s) please ensure that you:

- Remove the mains cable from the rear of the product before removing the top panel
- Only reassemble the unit using bolts/screws identical to the original parts



6 Music Inputs

The AE-1 is a mono device; The line input is a stereo connection, which is internally buffered and mixed to form a mono signal. There are two types of input on the front panel of the AE-1.

- A line Input level connection via unbalanced stereo RCA type phono sockets, that is suitable for all standard 'line out' signals. Input impedance is 20k Ω
- ¼" 3-pole jack socket connection, which has been designed to accept its signal from the 'headphones out' of general audio equipment. Input impedance is 47k Ω

In practice it may be advantageous not to use the line level output of the signal source equipment as this is generally for recording purposes and can give rise to a 'flat' sound, using the headphone output as the AE-1's music source can generally yield more musical results.

7 Music Level Control

The music level control adjusts the level of the music signal

8 Microphone Inputs

The unbalanced microphone input has a ¼" 'Jack' connector and is optimised for use with a radio microphone receiver. Conventional dynamic microphones with an impedance of approximately 600 Ω can also be used. No equalisation is provided but a high pass filter operating at 200Hz is imposed to remove 'breath blasts' and handling noise, to give a clear natural sound for optimum intelligibility.

9 Microphone Level Control

The user is provided with a convenient microphone level control on the front panel of the AE-1. When fully anticlockwise the microphone will effectively be turned off. Microphone signals are completely independent of music signals and are unaffected by them.

10 System Music Mute

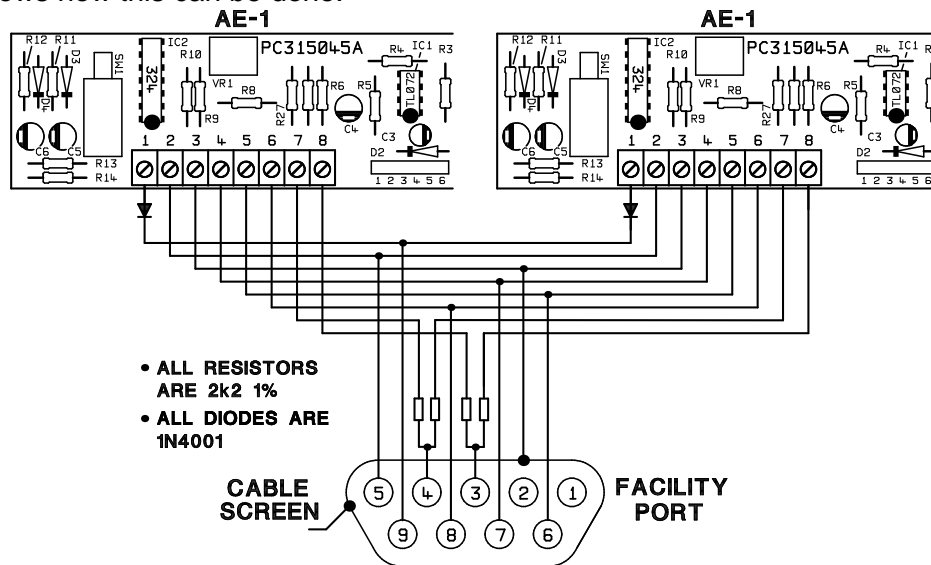
If the main sound system is configured to play background music in the zone that the AE-1 has been configured to operate, then it can be muted by depressing the 'system music mute' switch on the AE-1 front panel. This facility is tamperproof and will only operate when the AE-1 senses an input signal. The circuit has a hold time of approximately 30 seconds.

11 Music Ducking

The user can select 'music ducking' by depressing the switch on the AE-1 front panel. This will introduce a 10dB attenuation of the local and mixer music level whenever a mic signal is detected from the AE-1, both the attack and hold times are suitably swift.

12 Installing two AE-1's to a Single Facility Input

It is possible to connect two more than one AE-1 to a facility input of the Z4II or Z8II the following diagram shows how this can be done.

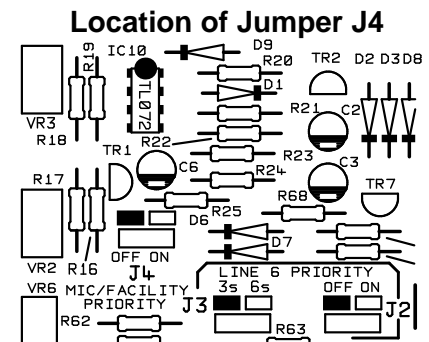


12a Configuring a Z4 or Z8 to an AE-1

Should you wish the mic signals from the mixer to override the AE-1 signals, set Jumper 'J4' on the zone board to the 'ON' position.

When setting the jumper(s) please ensure that you:

- Remove the mains cable from the rear of the product before removing the top panel
- Only reassemble the unit using bolts/screws identical to the original parts

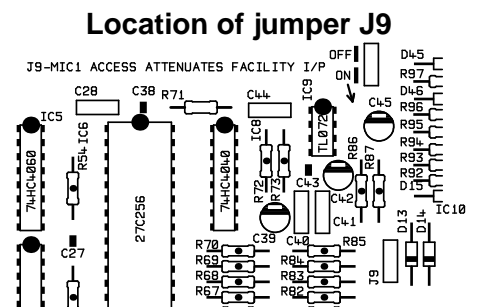


12b Configuring an MPA-626 to an AE-1

Should you wish the MPA-626 to override the AE-1 signals when Mic 1 is accessed, set jumper J9 to the 'ON' position.

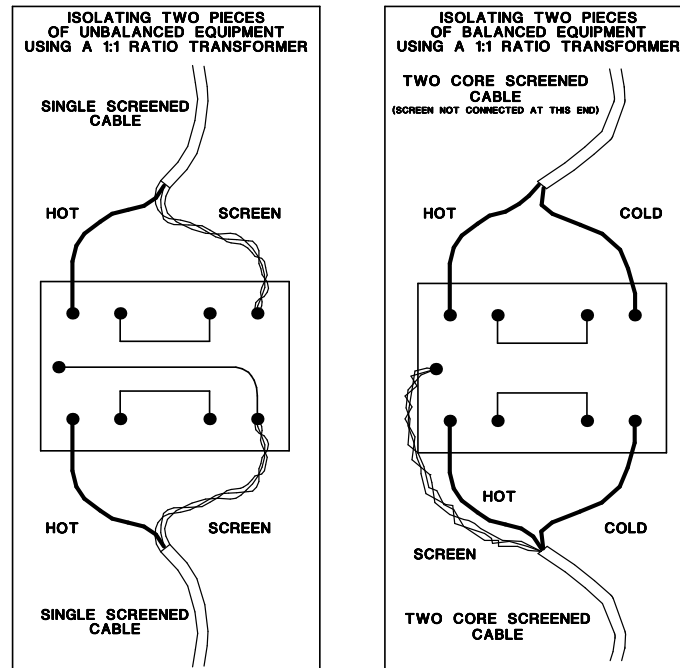
When setting the jumper(s) please ensure that you:

- Remove the mains cable from the rear of the product before removing the top panel
- Only reassemble the unit using bolts/screws identical to the original parts



13 Solving Problems: Ground Loops & Hum

Trouble free performance can be expected if both the music and microphone sources are derived from a double insulated mains powered unit (a unit with a two-core power cable that has no connection to mains earth). This will ensure that the main sound system does not have an additional power ground (earth) connection. Having more than one connection to the 'mains power earth' can give rise to problems known as 'earth loops' which cause a constant system 'hum'. The 'hum' is usually independent of any system control settings and will degrade system performance. If a signal source connected to the AE-1 has a three-core connection to the mains supply, and also has a safety earth connected to the metal housing, steps should be taken to isolate this earth termination from the sound system. The best way to isolate the earth termination is to use a high grade, line level audio transformer with no link between the primary and secondary windings (Diagram on the following page).



AUDIO TRANSFORMER RS PART NUMBER : 210-6447
 FITTED WITH SCREENING CAN RS PART NUMBER : 210-6469

14 Solving Problems: EMC Considerations

When fitted to the Cloud host unit, the AE-1 fully conforms to the relevant electromagnetic compatibility (EMC) standards and is technically well behaved; you should experience no operational problems under normal circumstances, and no special precautions need to be taken. If the unit is to be used within close proximity to potential sources of HF disturbance such as high power communications transmitters and radar stations, the performance of the mixer may be reduced. We suggest that in these circumstances the lead screens be connected to the plate of the remote panel via suitable means and the line input leads be kept as short as possible.

In the interest of continuing improvements Cloud Electronics Limited reserves the right to alter specifications without prior notice.

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