User Manual

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1 Introduction

Thank you very much, and congratulations on your decision to purchase PSI Audio Active Velocity Acoustic Absorber.

Carefully following the instructions in this manual will ensure that your system will give you many years of reliable and trouble free operations.

For the latest information, help or advice, please contact your local PSI Audio representative or PSI Audio directly.

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2 Safety Instruction

This symbol alerts the user to the presence of electrical power within the product that may be of sufficient magnitude to constitute a risk of electric shock.

This symbol alerts the user to important operating and maintenance (servicing) instructions or warnings.

2.1 Warnings

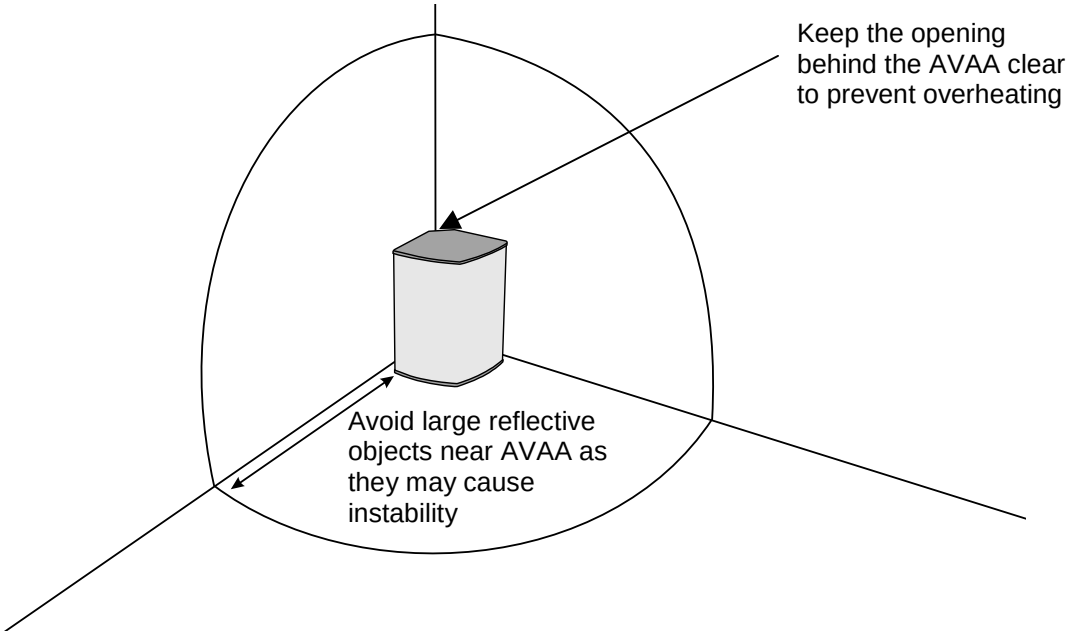
- Please read and follow the instructions carefully prior to operating the AVAA.
- An AVAA positioned above floor level represents a fall hazard. Please make sure your loudspeakers are always securely positioned or mounted in a stable position and can't fall. In particular make sure no child can make them fall.
- Please do not open the AVAA - risk of electric shock.
- Make sure not to expose the AVAA to any form of liquids. For cleaning, use only a dry cloth. In order to prevent spills, do not place any containers containing liquid on the AVAA. Do not use the AVAA close to water as this may create an electric shock hazard.
- Only use three wire mains cables and connectors with earth (grounding) according to your country standard.
- Check your AC voltage and make sure that the voltage setting and fuse on the rear of the chassis are set correctly.

- Do not operate the AVAA in a confined environment:
  The AVAA is designed to be positioned in a corner of a room with its rear side panels against the walls. However it is important that the rear panel is left with sufficient circulation and ventilation of air for cooling purposes. Make sure there are a few centimetres free behind the AVAA such as in a right angle corner.

- The AVAA is designed to work in rooms of minimum 10 m2. It is designed to be positioned in a corner. Apart from the 2 rear walls and the floor avoid positioning any large reflective object less than 1 meter away from the front of the AVAA as these may cause instability.

- Do not operate or install the AVAA near any kind of heat source.

- Only operate the AVAA with accessories specified by PSI Audio.



2.2 Service

The AVAA contains no user-serviceable parts. Service must be performed by qualified personnel. The primary fuse must be replaced by exactly the same type and rating. The unit must not be opened by the user – risk of a severe electric shock.

Servicing is required when:

- the AVAA has been damaged in some way, such as when the power-supply cord or plug is damaged,
- the AVAA has suffered from exposure to rain or moisture,
- liquid has been spilled into the AVAA,
- objects have been dropped into the AVAA,
- the AVAA does not work correctly.

Spare part supply :

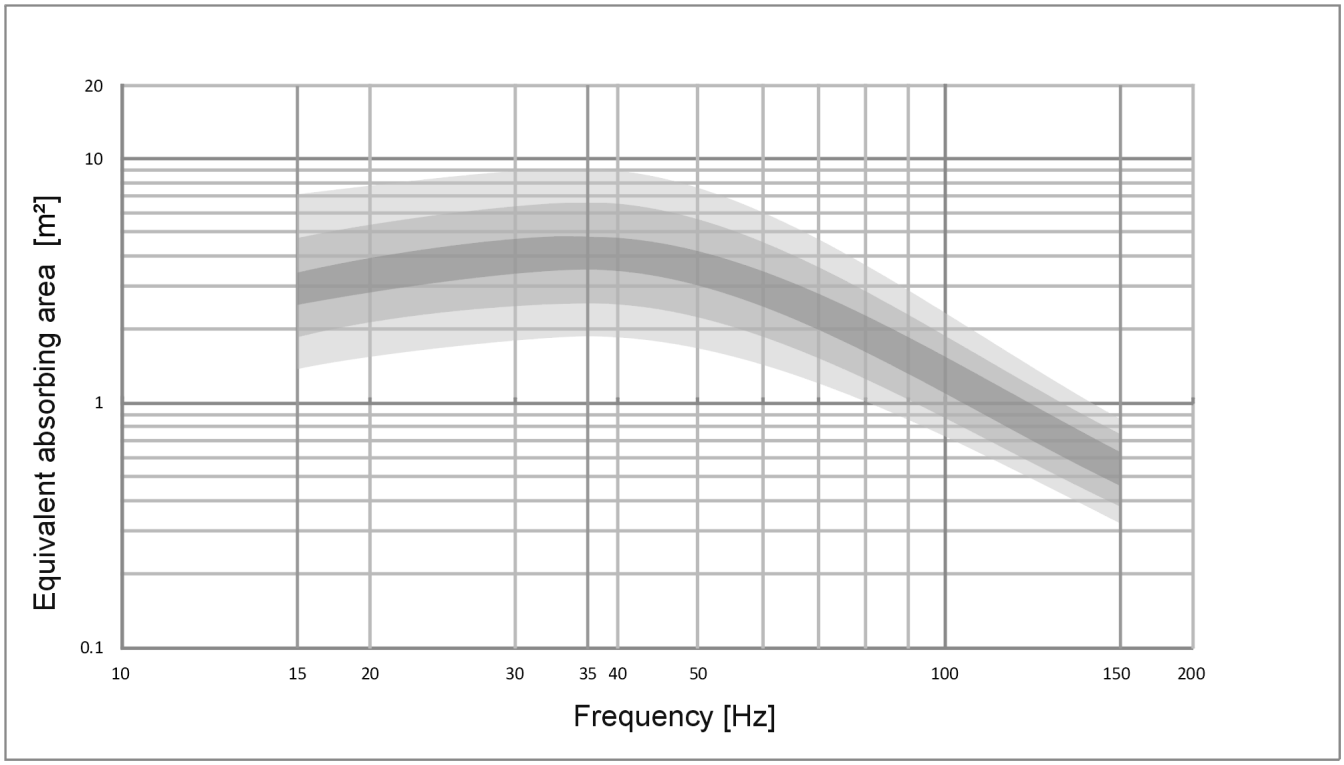
- For ordering, please contact your authorized dealer, mentioning your AVAA model and serial number (see point 3.3.).

3 General Overview

3.1 Description

The AVAA is designed to absorb the standing modes between 15 and 150 Hz in a room. Above these frequencies, passive systems are effective. For best results, the AVAA should be installed in a room where medium and high frequencies have already been treated with passive systems.

With frequencies below 150 Hz, each operating AVAA will have the same effect as a hole in the wall much larger than the dimensions of the AVAA.
The exact ratio will depend on the frequency and environment but typically range between 5 and 25.
The graph hereunder shows the typical equivalent absorption area of an active AVAA over the frequency bandwidth it is designed to absorb.
Note that an AVAA is approximately 0.2 m^2 so an equivalent sound absorbing area of 4 m^2 is 20 times the surface of the AVAA.



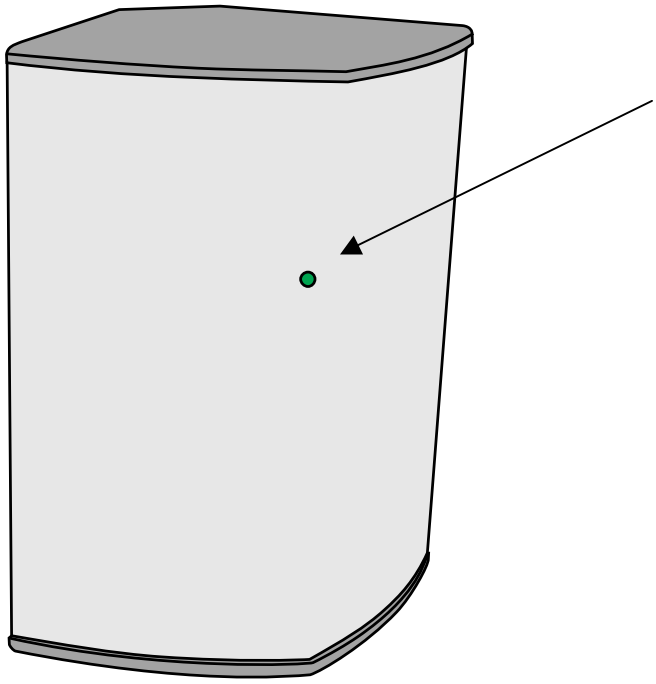
Note that in normal operating conditions the AVAA does not emit any audible sound or anti-noise but only absorbs low frequencies in a very effective way considering its size. Furthermore, it has no impact on the direct sound from your speakers or other source.

3.2 Before you start

Special care has been taken in the packaging of your PSI Audio equipment. Before you start to install it, please check that the following parts are included:

- AVAA
- Warranty certificate of calibration
- PSI AUDIO User Manual (this manual)

3.3 Front View Description



Power ON LED (Green)

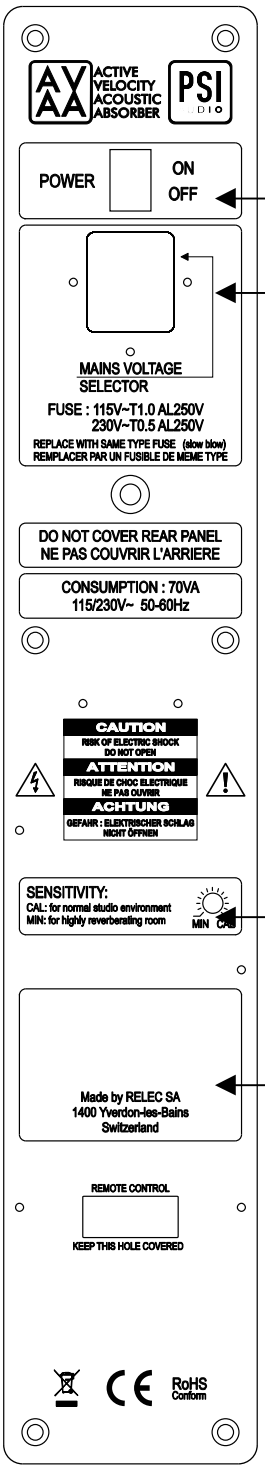
Mains power is present and the speaker is ready to use.

Limiter or Overheat or Standby LED (Red)

The LED will flash red when the limiter of the AVAA is working. This means that the AVAA is working at its fully capacity and can't absorb any further, even if the level is increased. This is simply and indication that the AVAA has reached its full capacity. It does not represent an issue.

A continuously red LED, even when sound level decreases, means that the amplifier is operating under overheated conditions and has turned into standby mode.

3.4 Rear Panel Description



Power On / Off Switch

Power Cable and
Voltage Selector / Mains Fuse
Selects AC voltage and fuse value

Sensitivity Potentiometer
Reduce sensitivity if using in a reverberating room

Model : PSI Audio AVAA XXX
Serial : N° XXXXXXXX

4 Quick Start

Setting up naturally takes a certain amount of time and using a remote control can help significantly. However, in case you need to get started quickly, please follow the quick set up guide. The rest of this manual will assist you in setting up your AVAA to your listening environment.

- Check that the voltage value on the AC power selector is set correctly (according to your local AC power supply). If this is not the case, it will be necessary to adjust the main power supply with the following procedure. Carefully squeeze the two latches on either side of the fuse plug and pull the fuse holder out of its socket. Now replace the fuse for the different voltage setting with the correct value fuse according to the required voltage. The correct value of the fuse is printed next to the On-Off switch of your AVAA. Pull out the grey plastic cap which holds the fuse and turn it 180° so it shows the correct voltage setting through the outer window when placed back in its position. Now you can carefully push the complete fuse holder back into its place above the mains connector.

- Connect the live cable whilst paying attention to the warnings mentioned under the chapter safety instructions.

- The AVAA is a large bandwidth absorber designed to be effective between 15 and 150 Hz in environments that are already absorbing in higher frequencies such as living rooms and studios. In theses environments no adjustment is necessary and the sensitivity potentiometer should be turned fully clockwise onto position “CAL”

- Should you wish to try your AVAA in a very small room or a highly reverberating room, you might need to reduce the sensitivity to ensure the system remains stable in all circumstances. You may do this by turning the potentiometer anti-clockwise towards “MIN”.

- We draw your attention to the fact that this AVAA may, in some critical conditions, become unstable and emit noise. PSI Audio declines all responsibility for eventual damage caused by the use of their AVAA under unstable conditions.

5 Operation

5.1 Power ON LED (Green)

The green LED on the front panel shows that the AVAA is operational. In the event that this LED does not lights up, check that the loudspeaker is connected to the AC power outlet and/or check the fuse.

5.2 Overload / Overheat LED (Red)

The red LED indicates the operation of the internal limiter. This is the case if the AVAA is exposed and operating with sound levels above 115 dB (where the AVAA is positioned) and working at its full capacity. In this case the AVAA LED will turn red as an indication that the AVAA can’t absorb any further. This does not represents an issue, however it is recommended to reduce the sound level.

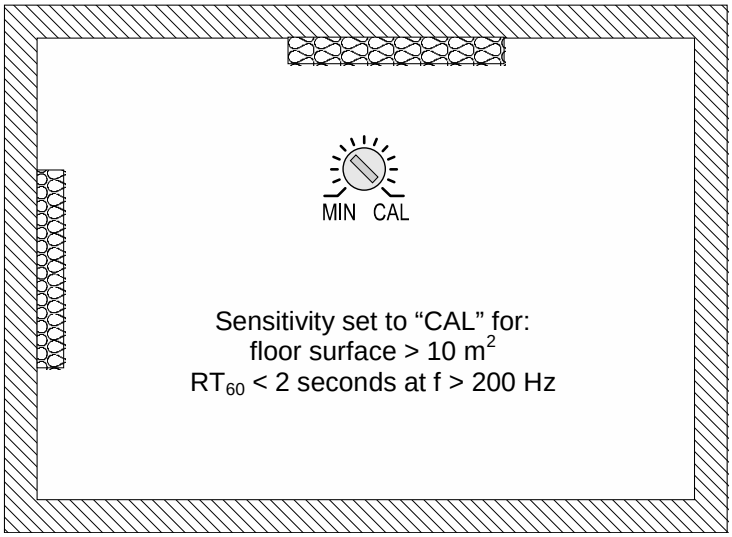
If the red LED stays continuously lit, this means that the amplifier is overheating, and the components are at risk of being damaged. Turn off the AC power immediately. Typical causes of overheat are lack of ventilation. Check that sufficient airflow is available behind and in front of the AVAA. Positioning the AVAA in a hot location may also cause overheating (such as radiators, direct sunlight, etc).

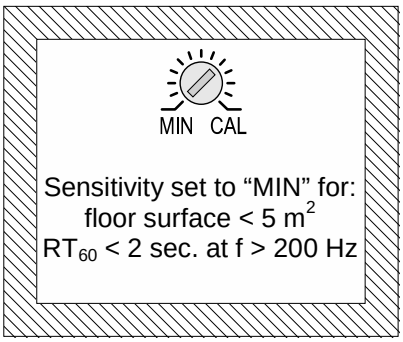
5.3 Sensitivity Potentiometer

The AVAA was designed to be efficient in normal environments such as living rooms and studios.
The sensitivity potentiometer has been added for the rare cases in which an AVAA is used in critical conditions such as a very small room or a highly reverberating room. In such rooms there is a

possibility that the AVAA will show signs of instability. If this is the case the best is to try and position the AVAA in another location. If this is not feasible it is possible to reduce the sensitivity of the AVAA so that it remains stable in its environment.

In all “normal” rooms the AVAAs can be used with its full sensitivity and with potentiometer turned fully clockwise on “CAL” position





5.4 Voltage Selector / Mains Fuse

See point 1 in the Quick Start section 4.

6 Installation

6.1 Environment

The AVAA is designed to be effective in a living room or studio that typically have a Rt60 of less than 2 seconds for frequencies above 200 Hz.
In highly reverberating rooms please use potentiometer as described under 5.3 Sensitivity Potentiometer.

6.2 Positioning

The effect of the AVAA depends on the acoustic characteristics of the room as well as the position of the loudspeakers.

The most effective position for the AVAA is in a location where the walls contribute most to the room modes that are disturbing in the listening position. In practice it is very easy to position the AVAA effectively after a few comparative trials.

Usual positioning of the AVAA, based on our experience

The starting position is in corners behind the source speakers as this is the most effective position in a majority of cases. However, depending on the structure of the room boundaries and listening position, other AVAA locations might turn out to be more effective. Try positioning them in different corners or against walls and evaluate effectiveness.

In practice it is quick and easy finding the best location by following the basic rules:
- AVAAs positioned in corners are more effective
- AVAAs located against rigid walls are more effective
- AVAAs positioned in corners behind the source are in general more effective than other similar corners

Bear in mind that the AVAA is designed to absorb long wavelengths and therefore there is little very little to gain by positioning the AVAA with great precision.

Positioning the AVAAs based on room measurements:

A more technical “2 steps process” can also be used to identify the best location for the AVAAs.

1 - Identify the disturbing room modes:
Assuming the loudspeakers and listening position have been set, measure the frequency decay time in the listening position.
Note that the most disturbing room modes are the ones with the longest extinction time and not necessarily the peaks and nulls that are the result of inevitable first reflections.
You may typically identify 3 to 6 modes.

2 - Identify the highest pressure zones for each problematic room mode:
Play a sine wave at the frequency of each disturbing room mode.
For each of these frequencies, walk around the walls of the room and note down the highest-pressure areas. You can do this with a sound level meter or listening with a single ear.
As a result you should have a map of your room highlighting the wall areas most contributing to each disturbing room mode. This will clearly show the best locations for the AVAAs.

6.3 Power connection

It is very useful to have all AVAA’s connected to a main power switch. This will, allow to easily turn the system on and off if you wish to hear the effect.

6.4 Mounting

Remember that any object positioned above floor level represents a fall hazard. Make sure your AVAA are always securely positioned or mounted in a stable position and can’t fall. In particular make sure no child can make them fall.

7 Troubleshooting

7.1 Power on LED does not light up.

Please check that the power switch is set on the ON position and that the mains cable is properly connected to the mains. If the problem persists, check the fuse, the voltage selector and the AC power voltage. If this doesn’t solve the problem, please contact PSI Audio or a PSI Audio authorised dealer.

7.2 AVAA is unstable and emits noise

In normal operating mode the AVAA doesn’t emit any audible sound. The presence of reverberating objects in the near field of the AVAA may destabilise the system and produce noise or whistling. If the AVAA becomes unstable you will distinctly hear it until the overload protection is reached, the system stops briefly and starts again.

- Remove any large reflective object that is close to the AVAA.
- Try positioning the AVAA in a different location.
- If necessary reduce the sensitivity of the device by turning the potentiometer anti-clockwise towards “MIN”.

8 C.E. & RoHS Conformities

PSI Audio products have been tested and calibrated according to the highest quality standards.
An individual calibration diagram is provided with each AVAA produced.

The PSI Audio products have been tested according to EU directives and amendments:

Low voltage directive (LVD), 2006/95/EC
Electromagnetic compatibility directive (EMC), 2004/108/EC
The relevant technical standards are:

EN 60065:	1998 Audio, video and similar apparatus – Safety requirements (Class 1)
EN 55103-1/E1:	1996 Product Standard – Emission Audio, Video and audio-visual apparatus for professional use
EN 55103-2/E1:	1996 Product Standard – Immunity Audio, Video and audio-visual apparatus for professional use

This product is manufactured according to the European directive 2002/95/EC

RoHS
compliant
2002/95/EC

9 Warranty

Our loudspeakers undergo several steps of quality control to ensure they leave our factory in perfect condition. We offer a warranty against any manufacturing or material defect for a period of 5 years on all electronics and transducers and 2 years on the wooden cabinets. Only Relec SA is able to qualify a manufacturing or material defect and its eligibility to be covered by the warranty. Wear and tear is not covered by the warranty.

Please contact your reseller for any query about warranty or servicing.
We kindly remind the user that unauthorised servicing can void the warranty. In order to provide a quality service, we ask the user to always include the warranty card at each service.

If goods need to be returned to the manufacturer (Relec SA), the symptoms must be clearly mentioned. In case of warranty, the parts and labour costs are at the charge of the manufacturer. If no defect in workmanship is detected, the warranty is considered invalid. A quote for the repair will be sent and the relative cost charged to the customer.

For services (covered or not by warranty), the expenses and the risks of the transports both ways between the customer and his supplier are the responsibility and at the charge of the customer.
For any other provision, the Swiss code of obligations, Articles 197 to 210 will apply.
For any legal action, reference will apply to the Court of Yverdon (Switzerland) only.