

HSA300

AMPLIFIERS

High Impedance Amplifier



USER MANUAL

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1. IMPORTANT REMARK




WARNING: SHOCK HAZARD - DO NOT OPEN
AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING (If applicable): The terminals marked with symbol of “” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

WARNING: An apparatus with Class I construction shall be connected to a mains socket-outlet with a protective earthing connection.

2. IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the apparatus during lightning sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Disconnecting from mains: When switching off the POWER switch, all the functions and light indicators of the unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket. For this reason, it always shall remain easily accessible.
15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.
16. The marking information is located at the bottom of the unit.
17. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on apparatus.



WARNING: This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment centre.

NEEC AUDIO BARCELONA, S.L. accepts no liability for any damage that may be caused to people, animal or objects due to failure to comply with the warnings above.

3. IMPORTANT NOTE

Thank you for choosing our Ecler **HSA300 High Impedance Amplifier!**

It is **VERY IMPORTANT** to carefully read this manual and to fully understand its contents before any connection in order to maximize your use and get the best performance from this equipment.

To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.

Ecler **HSA300** comes with a **3-year warranty**.

4. INTRODUCTION

The HSA300 is a single-channel power amplifier with a directly amplified high impedance output (100V line).

4.1. Main Features

- **SPM 100 Technology - N Channel** direct high impedance amplification (100V line), without output transformers, which has the following advantages over the classic amplification for a 100V line using transformers:
 - Better frequency response in the low band of the audible spectrum (bass frequencies), in the absence of the usual degradation for this part of the spectrum caused by the saturation of the transformer cores
 - High performance
 - Low weight
- Thermal protection
- Overload protection
- “Anti-clip” or anti-saturation system against strong input signals

5. INSTALLATION

5.1. Placement and assembly

The HSA series amplifiers come in 19" rack module format, two units high.

It is important that the amplifier, as a heat source, is not placed next to other equipment nor exposed to high temperatures.

If the installation is done inside rack cabinets enclosed by doors, it is highly recommended to fit these with forced ascending ventilation, installing fans at the top and bottom. This upward flow of ventilation will help in dissipating the heat generated inside.

In order to favour as far as possible the proper heat dissipation of the equipment units installed in rack cabinets, it is advisable not to place the power amplifiers under other devices, but rather above these.

The HSA amplifiers are supplied with plastic washers so they can be mounted in a rack without damaging the mounting flanges.

5.2. Mains connection

The amplifier is powered with alternating current, depending on the country, 110-120, 220-240V 50/60Hz. (see specifications plate on the device), and its maximum power draw is 482VA.

The amplifier must be connected to proper grounding (resistance, $R_g=30\Omega$ or less).

Avoid intertwining the mains cable with the shielded cables that carry the audio signal, as this could lead to interference and humming.

In order to protect the unit from an eventual electrical overload or momentary power peaks from the internal circuits it is fitted with a fuse. Should it ever blow, unplug the unit from mains and replace it with an identical one. If the new fuse blows again, contact our Authorized Technical Service immediately.



CAUTION: IN NO EVENT SHOULD A FUSE OF HIGHER VALUE THAN THE NOMINAL VALUE BE INSTALLED.

5.3. Signal input connections

On its rear panel, the HSA300 amplifier has an analogue, balanced and line level input signal.

The signal input connectors are three pin Euroblock connectors (11). The assignment of the connections is as follows:

Live or direct signal	>	Terminal +
Cold or inverted signal	>	Terminal -
Ground	>	Terminal ⊥

For unbalanced connections short the - terminal to ground.

The input impedance is 22k Ω (balanced) with a nominal sensitivity of 0dBV (1V). This impedance allows for a large number of amplifiers to be connected in parallel without degrading the sound quality.

5.4. Output connections

The *OUTPUT* section on the rear panel is fitted with a two pin (10) Euroblock connector. During the wiring tasks of one or more amplifiers, always respect the relative polarity of the outputs (+ and - markings on each output connector), cabling and speakers.

5.5. Internal switch for pass-high filters

Inside the amplifier there is a (“*jumper*”) switch to enable / disable the high-pass filter of the amplifier, with a cut-off frequency set at 70Hz and with a slope of 18dB / octave. It is recommended that in certain applications the high pass filter should act on the 100V line, especially when the audio playback content is primarily vocal (paging announcements, for example).

Refer to section [10. Block Diagram](#) and [9 Configuration Diagram](#) for further information.

6. OPERATION AND USAGE

6.1. Turning on

This is done by means of the *POWER ON* (6) mains switch and the pilot light in the switch itself will come on.

In a full audio installation it is essential to start up the equipment in the following sequence: sound sources, mixers, equalizers, processors, active filters, and finally, the power amplifiers. To shut these down, follow the reverse sequence. By following this sequence the peaks or transients produced by switching a device on or off will not affect the next ones in the chain, preventing these from getting to the speakers, which are the components that are likely to suffer damage in these cases.

6.2. LED indicators on the front panel

The HSA300 has the following LED indicators on the front panel:

- **SIGNAL presence indicator** (4): warns of the presence of a signal at the amplifier's input. This indicator lights up when the signal present at the input exceeds -35dB
- **OVERLOAD indicator** (3): lights up when the channel reaches its power delivery capacity limit, due to a load with an excessively low impedance
- **CLIP cut-off indicator** (2): lights up when the signal delivered to the speakers is cut close to the actual cut-off level. This *CLIP* system takes into account the possible fluctuations in voltage of the power supply, always providing a true reading even though these exist.

It is normal that when operating at high output power, the *CLIP* indicators light up in synchronisation with the low frequencies, which carry the most energy. Ensure that these indicators do not stay permanently lit during the normal operation of the equipment

- **THERMAL heat protection indicator** (1): indicates that the amplifier has entered a state of over-temperature protection, its normal operation will be restored when its temperature returns to the normal operating temperature range.

6.3. Volume control on the front panel

The front panel has rotating volume control (5) for the amplifier output level.

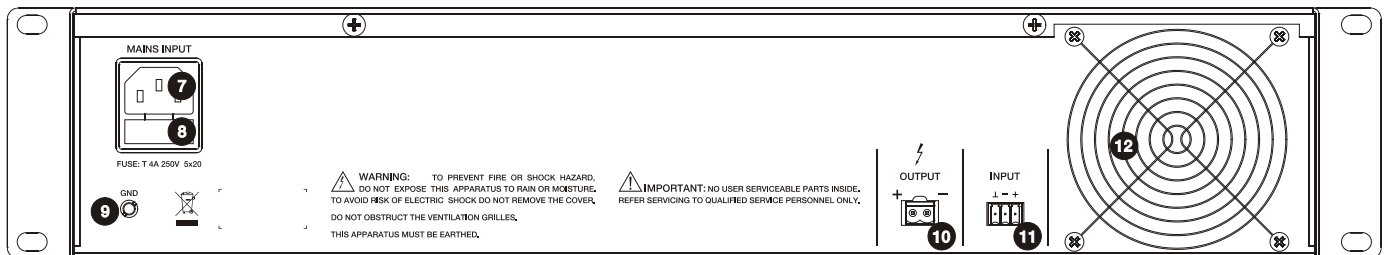
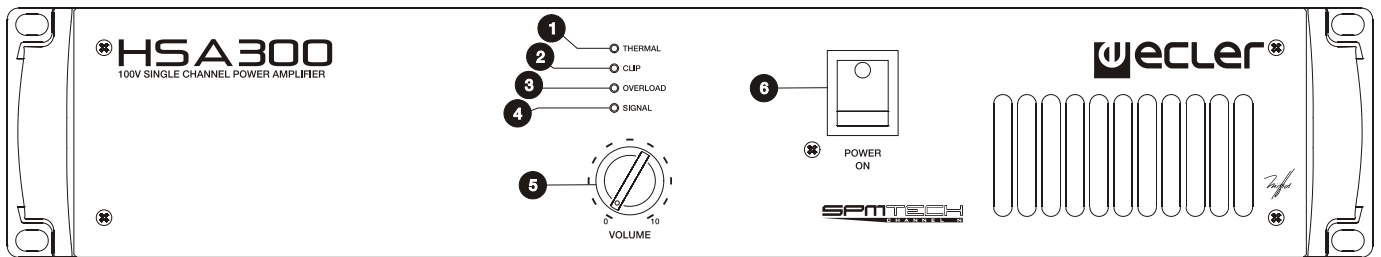
In the packaging of the device, you will find bag with a transparent cap that can be fitted to the rotating control on the front panel. Its function is to protect the volume setting from accidental changes while the installation is being used. Once inserted it is necessary to use a flat screwdriver or a similar tool to remove it.

The transparent cap on the volume controls are for single use only. Additional units can be purchased as spare parts (ref: FCBOTD240100)

7. CLEANING

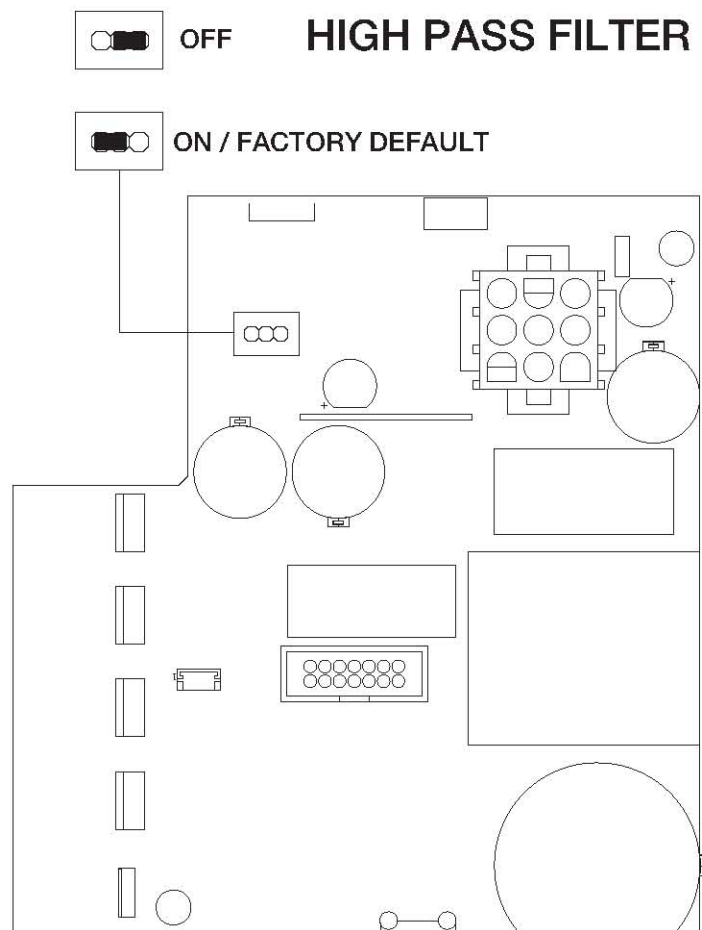
The front panel should not be cleaned with solvents or abrasive substances because the silk printing could be damaged. To clean it, use a soft cloth slightly wet with water and neutral liquid soap; dry it with a clean cloth. Ensure that water never gets into the amplifier through the holes of the front panel.

8. DIAGRAMS AND LIST OF FUNCTIONS

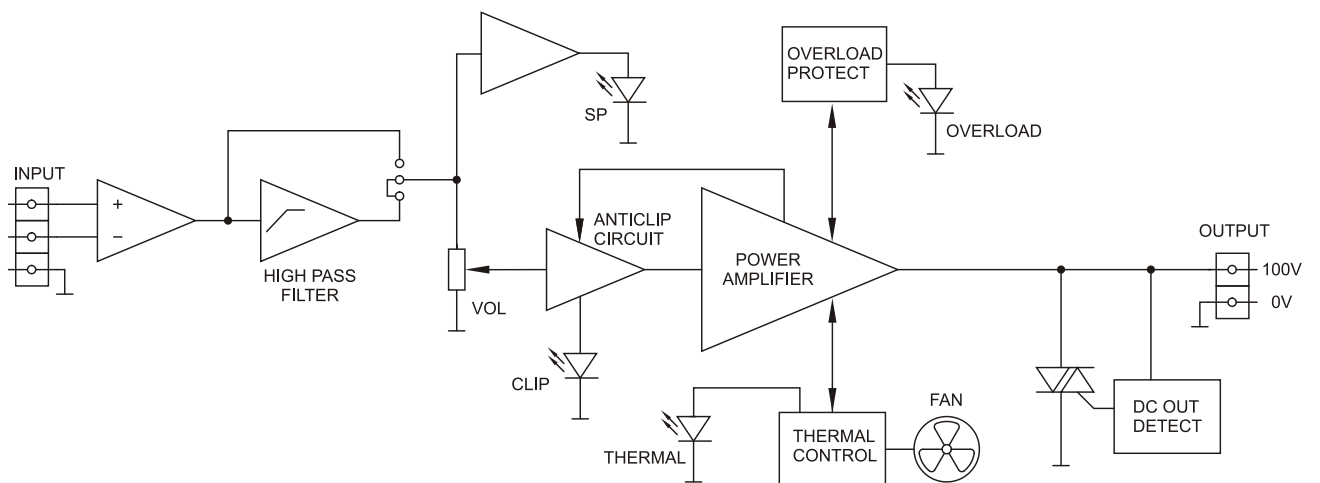


- | | |
|---|---------------------------------|
| 1 THERMAL, heat protection indicator | 7 Mains socket |
| 2 CLIP cut-off indicator | 8 Fuse holder |
| 3 OVERLOAD indicator | 9 GND grounding terminal |
| 4 SIGNAL presence indicator | 10 OUTPUT screw-type connectors |
| 5 Volume | 11 INPUT screw-type connectors |
| 6 POWER switch and start up pilot light | 12 Fan |

9. CONFIGURATION DIAGRAM



10. BLOCK DIAGRAM



11. TECHNICAL CHARACTERISTICS

HSA300

Power Output	
RMS Power @ 10% THD	302 WRMS @ 100V line
RMS Power @ 1% THD:	254 WRMS @ 100V line
Frequency response (-1dB, -3dB)	30Hz - 35kHz
Filter (High-Pass) 3rd order Butterworth	70Hz
THD+Noise @ 1kHz Full Power	<0.07%
SNR	>85dB
Damping factor 1kHz @ 8Ω	N/A
Input sensitivity / Impedance	0dBV/>20k
Anticlip @ 2ddBV input	N/A
Mains voltage	115V/230V. Voltage changed internally (NOT BY SWITCH)
Power consumption	
pink noise, 1/8 power	218VA @ 32Ω
pink noise, 1/3 power	319VA @ 32Ω
General	
Dimensions	482.6x88x285mm
Weight	8.4kg

All product characteristics are subject to variation due to production tolerances. **NEEC AUDIO BARCELONA S.L.** reserves the right to make changes or improvements in the design or manufacturing that may affect these product specifications.

For technical queries contact your supplier, distributor or complete the contact form on our website, in [Support / Technical requests](#).

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