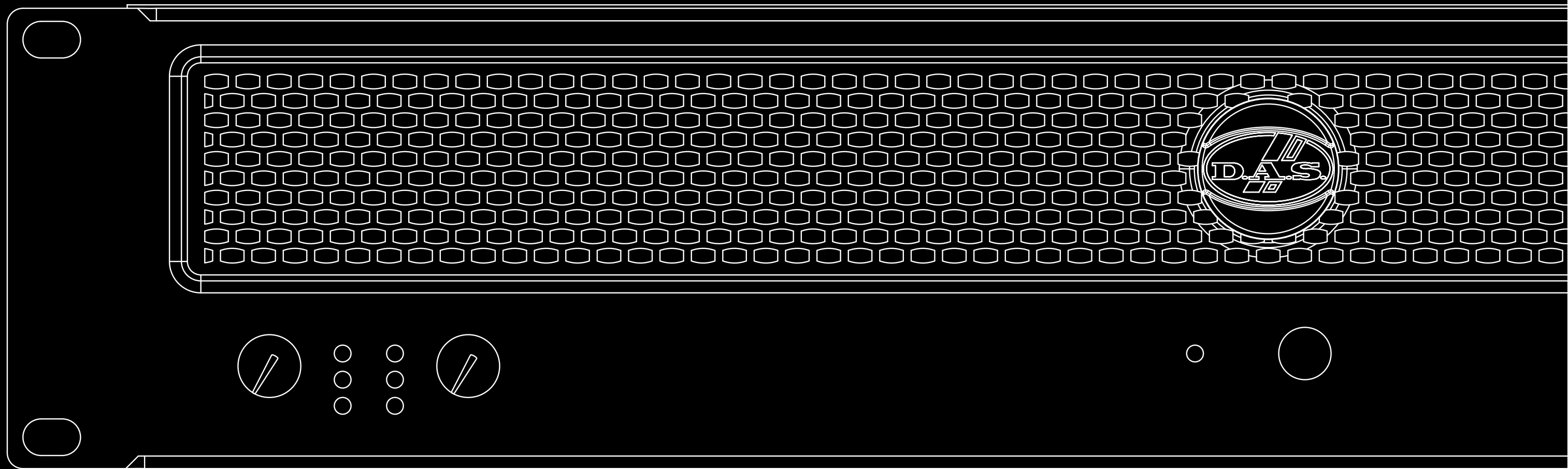


HA Series

User manual



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HA Series

Safety precautions

Keep these instructions.

Heed all warnings. Follow all instructions.



The exclamation point inside an equilateral triangle indicates the existence of internal components whose substitution may affect safety.

Class I device.



The lightning and arrowhead symbol warns about the presence of uninsulated dangerous voltage. To reduce the risk of electric shock, do not remove the cover.

The lightning and arrowhead symbol near the output terminals of the amplifier alert of the risk of electric shock in normal conditions of use (terminal dangerous to the tact). Do not touch these terminals while the amplifier is working.

The connected outer wiring to these terminals requires of its installation by an instructed person and the use of a flexible the cable already prepared.



This symbol on the product indicates that this product should not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

The ON position is indicated in the switch by means of the corresponding standardized symbols (IEC 60417-1 and IEC 60417-2) and two green LEDs located near the switch.

If the apparatus is connected permanently, the electrical system of the building must incorporate a multipolar switch with a separation of contact of at least 3mm in each pole.

Do not expose this device to rain or moisture. Do not use this apparatus near water (for example, swimming pools and fountains). Do not place any objects containing liquids, such as bottles or glasses, on the top of the unit. Do not splash liquids on the unit. IP-20 equipment.

Clean only with a dry cloth. Do not use any solvent based cleaners.

Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.

The circulation of air on the fan inlet grills must not be blocked. The air stream circulates from back to front.

Working temperature ranges from 15oC to 35oC with a relative humidity of 75%.

Unplug this apparatus during lightning storms, earthquakes or when unused for long periods of time.

Take into account that the nominal AC voltage is the value shown in the equipment $\pm 10\%$ (according to IEC 60065).

If the cable or the mains plug are damaged they must be replaced. Contact the manufacturer to provide you with the necessary spare parts. No user serviceable parts inside. Refer all servicing to qualified service 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.

HA Series

Warranty

All our products are warrantied against any manufacturing defect for a period of 2 years from date of purchase.

The warranty excludes damage from incorrect use of the product.

All warranty repairs must be exclusively undertaken by the factory or any of its authorised service centers.

To claim a warranty repair, do not open or intend to repair the product.

Return the damaged unit, at shippers risk and freight prepaid, to the nearest service center with a copy of the purchase invoice.

Declaration of conformity

DAS Audio Group, S.L.

C/ Islas Baleares, 24 - 46988

Pol. Fuente del Jarro - Valencia. España

(España)

Declares that PA series amplifiers:

Abide by essential objectives relating Directives:

- | | |
|---------------------------|------------|
| • (Low Voltage Directive) | 2014/35/UE |
| • (EMC) | 2014/30/UE |
| • RoHS | 2011/65/UE |
| • RAEE (WEEE) | 2012/19/UE |

In accordance with Harmonized European Norms:

- EN 60065:2014.- Audio, video and similar electronic apparatus. Safety requirements.
- EN 55032:2012.- Electromagnetic compatibility of multimedia equipment. Emission requirements.
- EN 55103-2:2009.- Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2:Immunity.
- EN 50581:2012.- Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

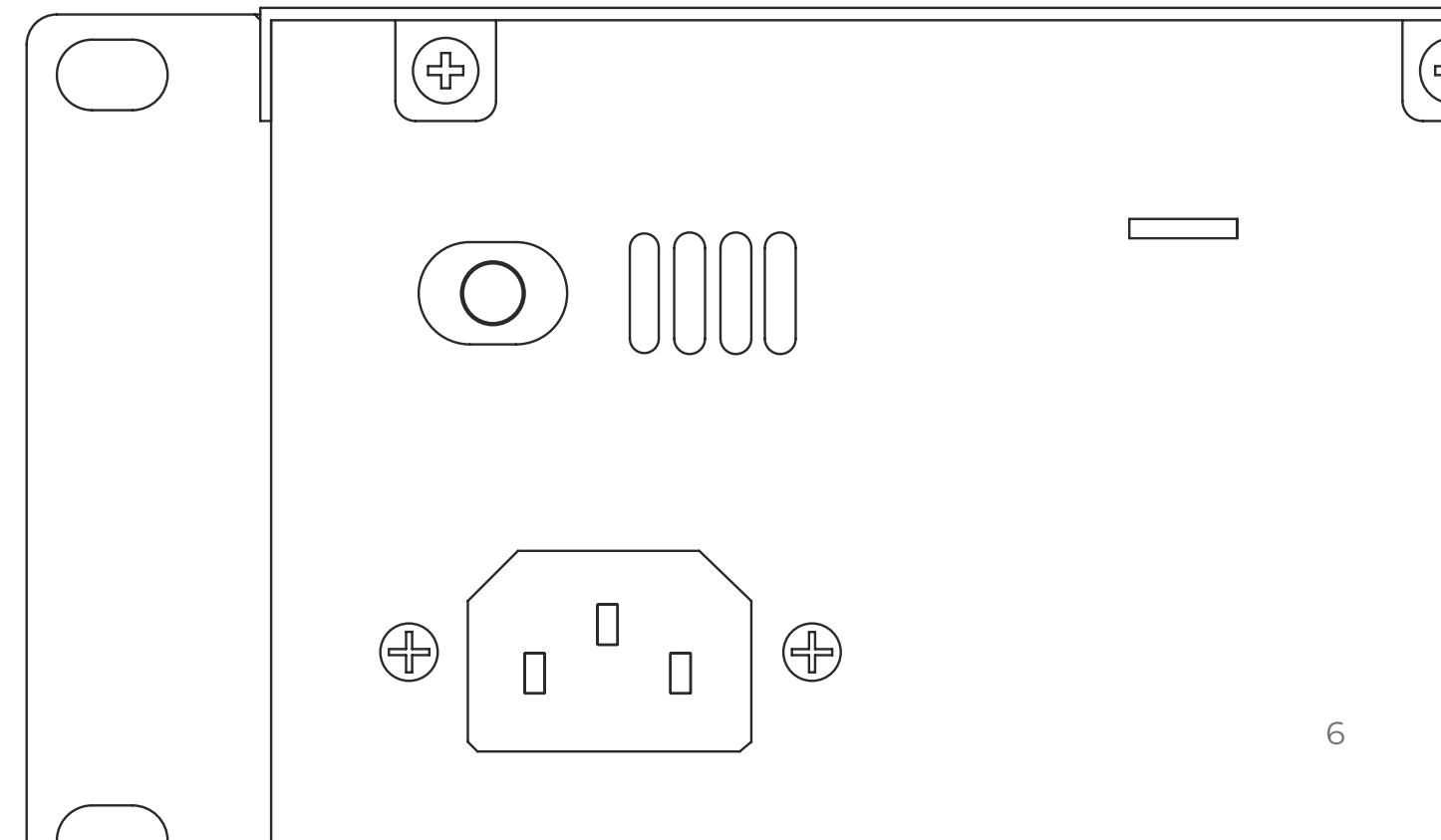
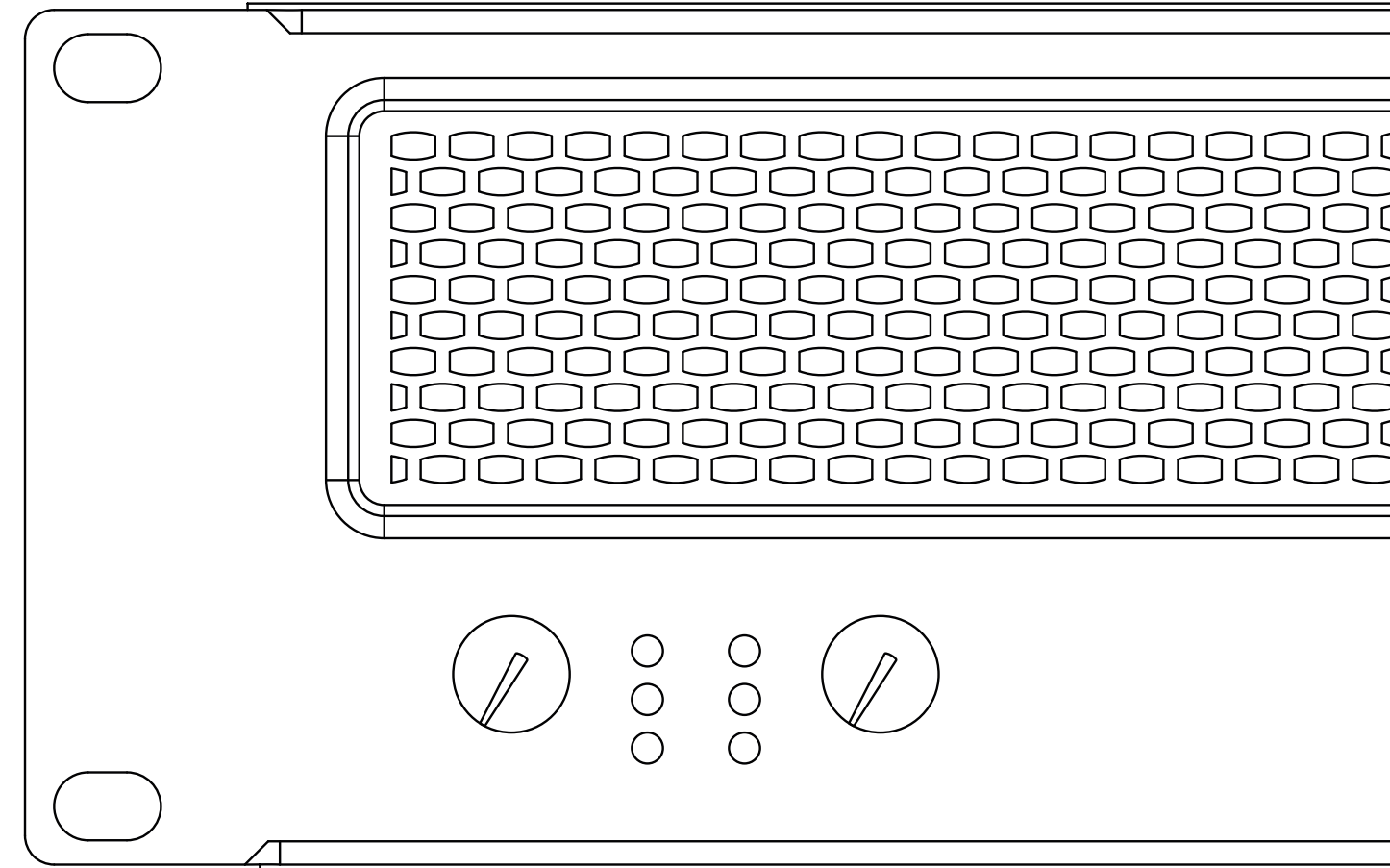
HA Series

Introduction

Thank you for choosing a DAS Audio HA Series amplifier. These amplifiers are designed for reliable and efficient performance using advanced technology. HA amplifiers ensure safe and durable operation, ideal for both professional installations and mobile applications.

Features

- Efficient linear power supply.
- Dual balanced XLR inputs.
- Speakon output connections.
- Variable speed front to back fan cooling.
- Front located volume controls.
- Input sensitivity switchable between 0.775V and 1.4V.
- Circuit breaker protection.
- Stereo, parallel and bridge operation modes.
- Protection against output short-circuits, overloading and overheating.
- Power, Clip, protection and signal LED indicators.



Front panel description



Power switch (A) and power LED (B)

Turns the amplifier on/off when the push button is pressed. When turned on, the power LED lights blue color.



Level controls (C)

Use to set the output level of each channel. The maximum gain is achieved when the LEVEL rotary potentiometer is turned fully clockwise.



Clip LED (D)

When the output signal distortion of the corresponding channel exceeds 1%, the LED will light, due to the signal level being is too high.



Protection LED (E)

When circuit protection works, the LED will light, especially when the heat-sinks overheat or detect the DC voltage in the amplifier. Also, turn on the amplifier and within three

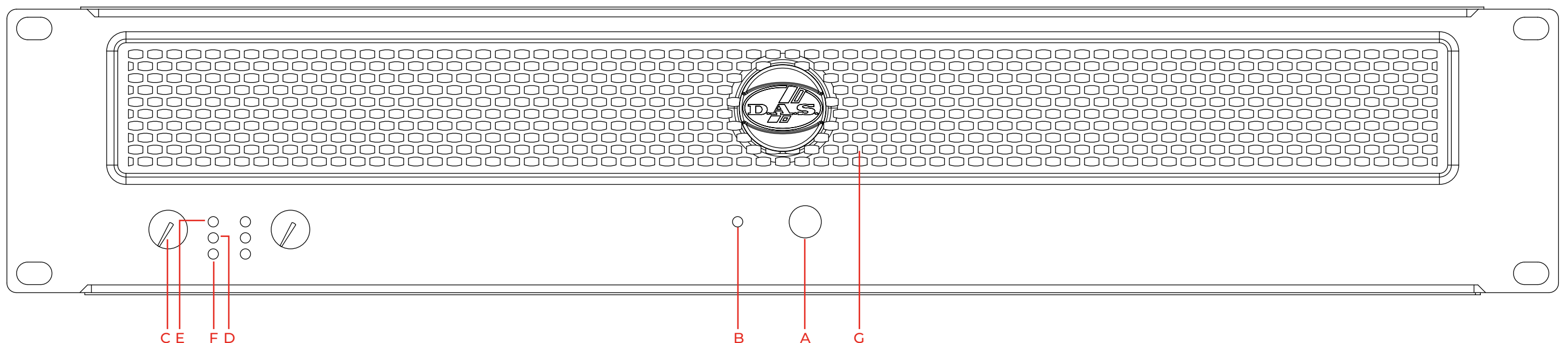


Signal LED (F)

When there is an input signal, the LED will light. If not, please check the gain settings. If necessary, the gain can be increased. Check the input connection and signal audio source. If the Clip LED shines a little or shows no signal, check the output wire whether it is in short-circuit or not.

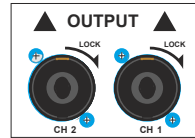
Cooling air grilles (G)

Fan cooling permits airflow through the most vital parts of the amplifier. Since the airflow finds its way out through these grilles, keep them as clean and dust-free as possible to assure proper cooling.



HA Series

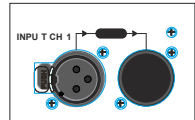
Back panel description



Speaker outputs (A)

Connecting speakers to each output it is done through Speakon-type connectors whose pin assignments are:

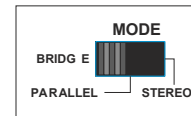
- Channel 1 (stereo and parallel modes): pin +1 = positive / pin -1 = negative
- Channel 2 (stereo and parallel modes): pin +1 = positive / pin -1 = negative
- Channel 1 (bridge mode): pin +1 = positive / pin +2 = negative



Inputs (B)

CH1 and CH2 are directly connected to the mixer, the input and output connectors of the respective channel are put together, to provide fixed connection, and no need to consider the power switch setting.

The nominal input impedance of 20kohms and 10kohms balanced mode in non-balanced mode.



The pin assignment is according to the standard AES14-1992 (ANSI S4.48-1992):

Pin 1 (XLR) : GND (Ground)

Pin 2 (XLR) : (+) Non-inverted signal

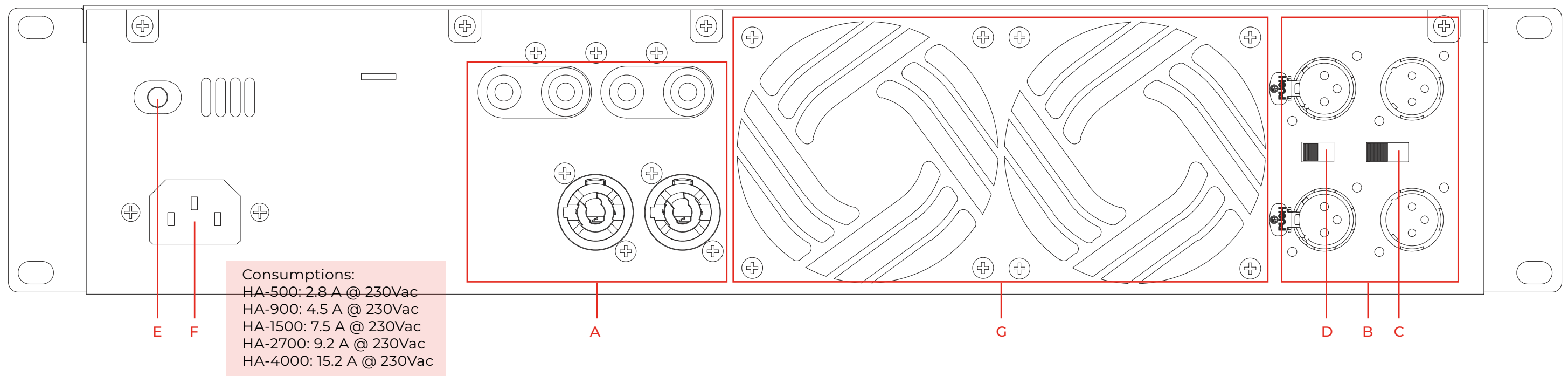
Pin 3 (XLR) : (-) Inverted signal

Mode switch (C)

STEREO mode makes the two channels work independently, CH1 input signal by CH1 output, CH 2 input by CH2 output.

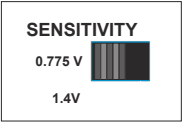
BRIDGE mode makes CH1 input signals from the BRIDGE output socket, output must use CH1 volume control to adjust the volume.

PARALLEL mode makes CH1 input signal by CH1 and CH2 output socket output. The input socket of Ch2 has no effect. Channel's volume can be adjusted independently.

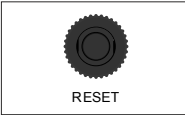


HA Series

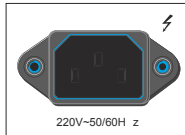
Back panel description



Sensitivity mode (D)
This switch allows to set the sensitivity between 0.775V or 1.4V.



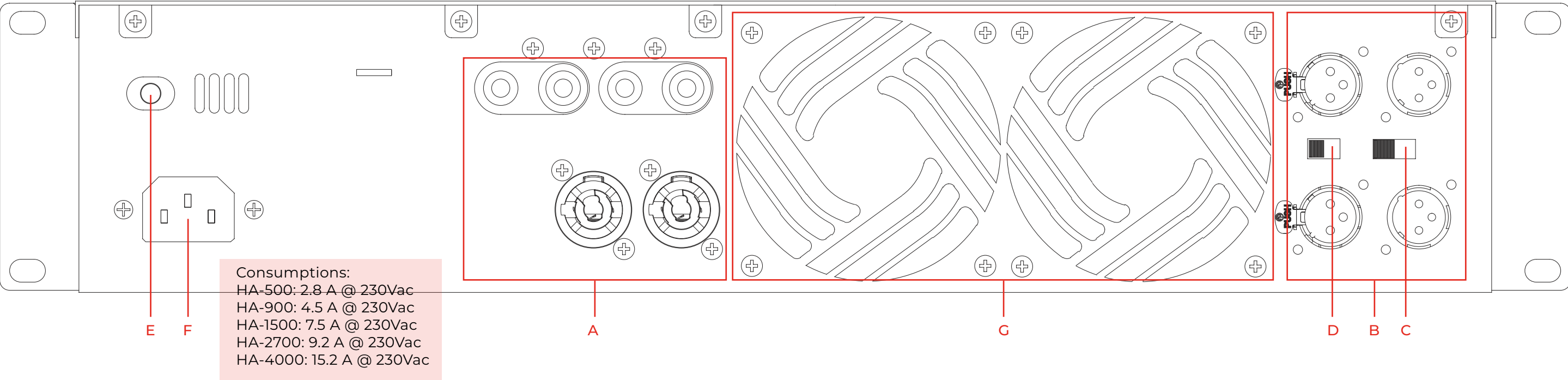
Circuit breaker (E):
When amplifier is overloaded (caused by the small load impedance of the amplifier or the continuous input signal), the button of the circuit breaker will upspring immediately, and will be cutoff power automatically to protect the amplifier. You must exclude overload condition, and then press the button of the circuit breaker, and the power amplifier will resume to normal operation.



Power outlet (F)
LaThe amplifier is provided with a socket IEC320-C14. **When using the amplifier, one should check whether the**

selected voltage is correct or not. If the voltage is wrong, it could damage the amplifier. Please ensure that the device is connected to the power supply with ground to use.

Cooling air outlet grilles (G)
Fan cooling permits airflow through the most vital parts of the amplifier. Since the airflow finds its way out through these grilles, keep them as clean and dust-free as possible to assure proper cooling.



HA Series

Instalation

Racking

All amplifiers are 19-inch rack mount width and are 2U DIN in height. Four front-panel mounting holes are provided for use with M5 or M6 or 1/4" screws. To avoid bending the chassis in rack mounting applications where the rack will be transported, mount the amplifiers to the back of the rack using the rear mounting holes. Alternatively, place the bottom amplifier against the base of the rack and pile the amplifiers with no clearance in between.

A fan cools the aluminum heat sinks from front to back.

Fan cooling permits airflow through the most vital parts of the amplifier.

When mounting the unit onto a 19-inch rack, a rack cooling system is not required, since the air is exhausted out through the front grille. However, the rack must not be sealed, and it should at least have a large enough ventilation grille to allow air into the rack.

Input connection

A balanced connection is recommended with XLR connectors, but an unbalanced connection can also be used.

Speaker connection

Connect speakers at one or two output Speakon connectors. See the rear panel instructions.

Speakon connectors offer quick connection for portable applications. To enable a Speakon connection, plug the male connector into the outlet and rotate it clockwise. It will then lock into place and be ready for use.

Mains connection

Should check whether the selected voltage is correct or not. If the voltage is wrong, it could damage the amplifier.

The 230 V AC version has a nominal voltage plus minus 10%, i.e., the amplifier can operate from 207 V to 253 V AC.

Similarly, the 115 V AC version has a nominal voltage plus minus 10%, i.e., the amplifier can operate from 103 V to 127 V AC.

In both cases the operating voltage will be indicated on the back panel.

ON/OFF

The main power switch is a push button that turns the amplifier on/off.

When the amplifier turns on, the power LED and protection LED are illuminated. After a few seconds, when the start is finished the PROTECTION LED will go out and the amplifier will be ready for use. To turn the amplifier off, push the button. At that moment the main power supply voltage and the secondary power supply voltage will turn off internally.

Switch your sound system on from back to front. Thus, switch on the amplifiers last on your sound system. Switch sound sources (CDs, turntables) first, then your mixer, then your processors and crossovers and finally the amplifiers. If you have more than one amplifier, switch them on sequentially, one at a time or use a sequencer.

Follow the reverse order when switching off, and switch off the amplifiers before any other element on your sound system.

HA Series

Installation

Clip LED

The clip LED should never be on continuously. This will distort the signal and may damage the speakers. In fact, severe clipping is an easy way of burning a speaker's voice coil.

The amplifiers feature an automatic limiting system that impedes prolonged saturation, but the dynamic nature of music signals stops it from being a brick wall protection. Thus at most, the clip light could be lit occasionally.

Level controls

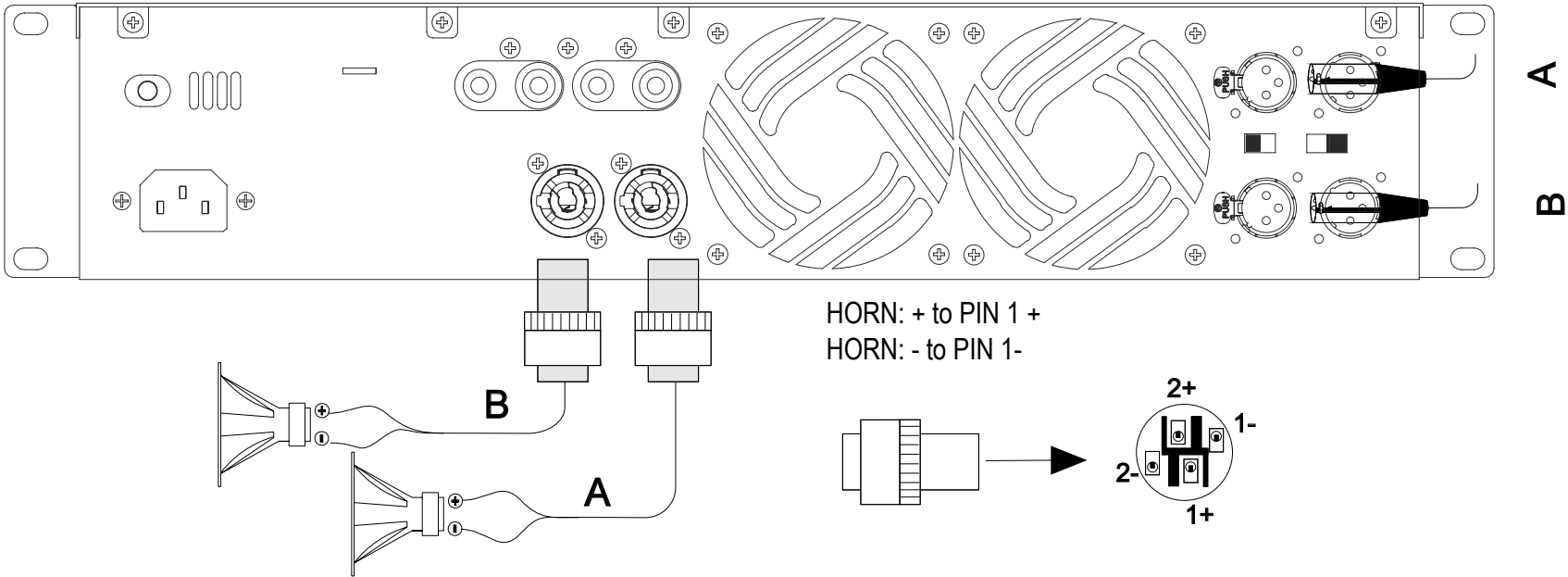
The level rotary potentiometer is used for changing the input gain. Although related to output power, it is not a direct representation of it. Thus, we can have maximum output power with the gain at mid position. Similarly, we may have the gain controls at maximum and not have maximum output if our source signal is not strong enough. One way to use the volume controls is to set them such that when the mixer's faders are at their maximum level, we are just below clipping level on the amplifier or clipping very occasionally.

HA Series

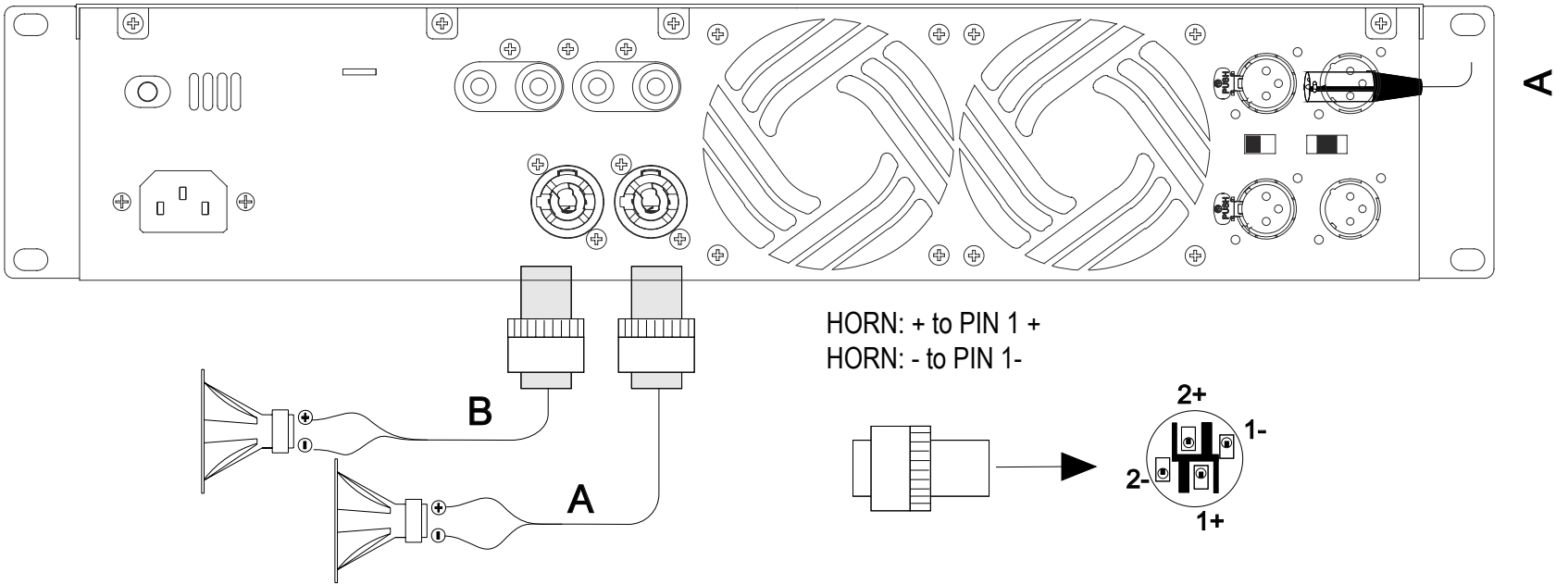
Connections according to operation mode

Note: Examples with the PA-2700 model:

Stereo connection



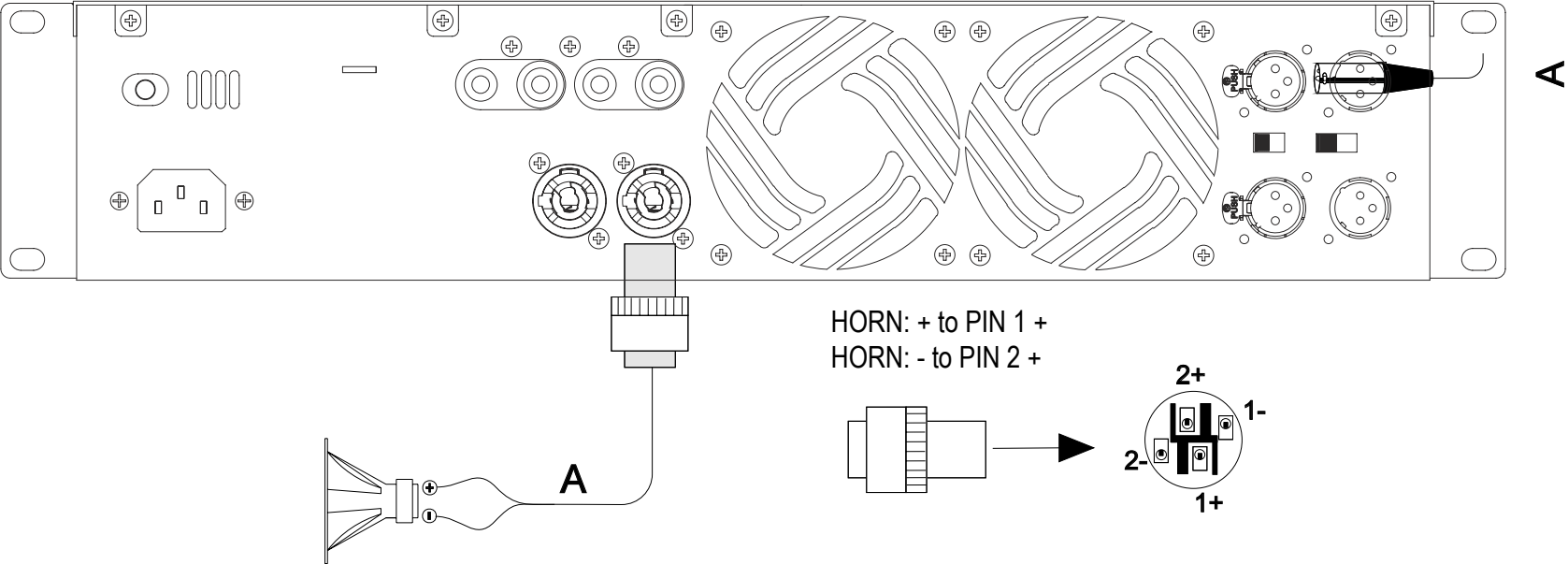
Mono connection



HA Series

Connections according to operation mode

Bridge connection



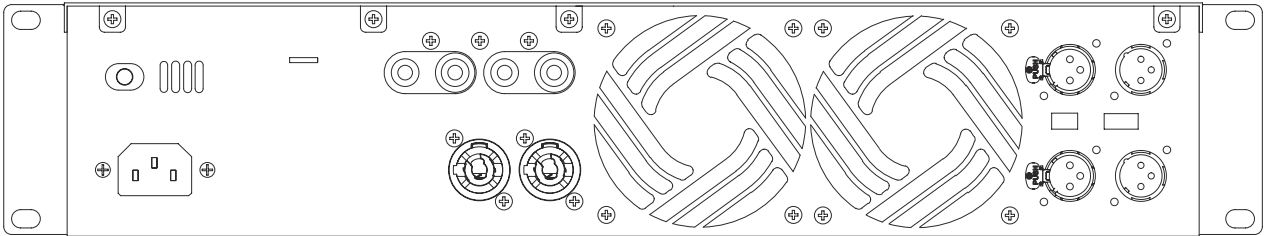
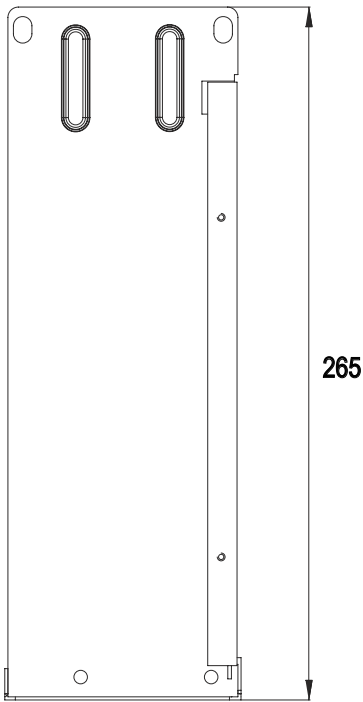
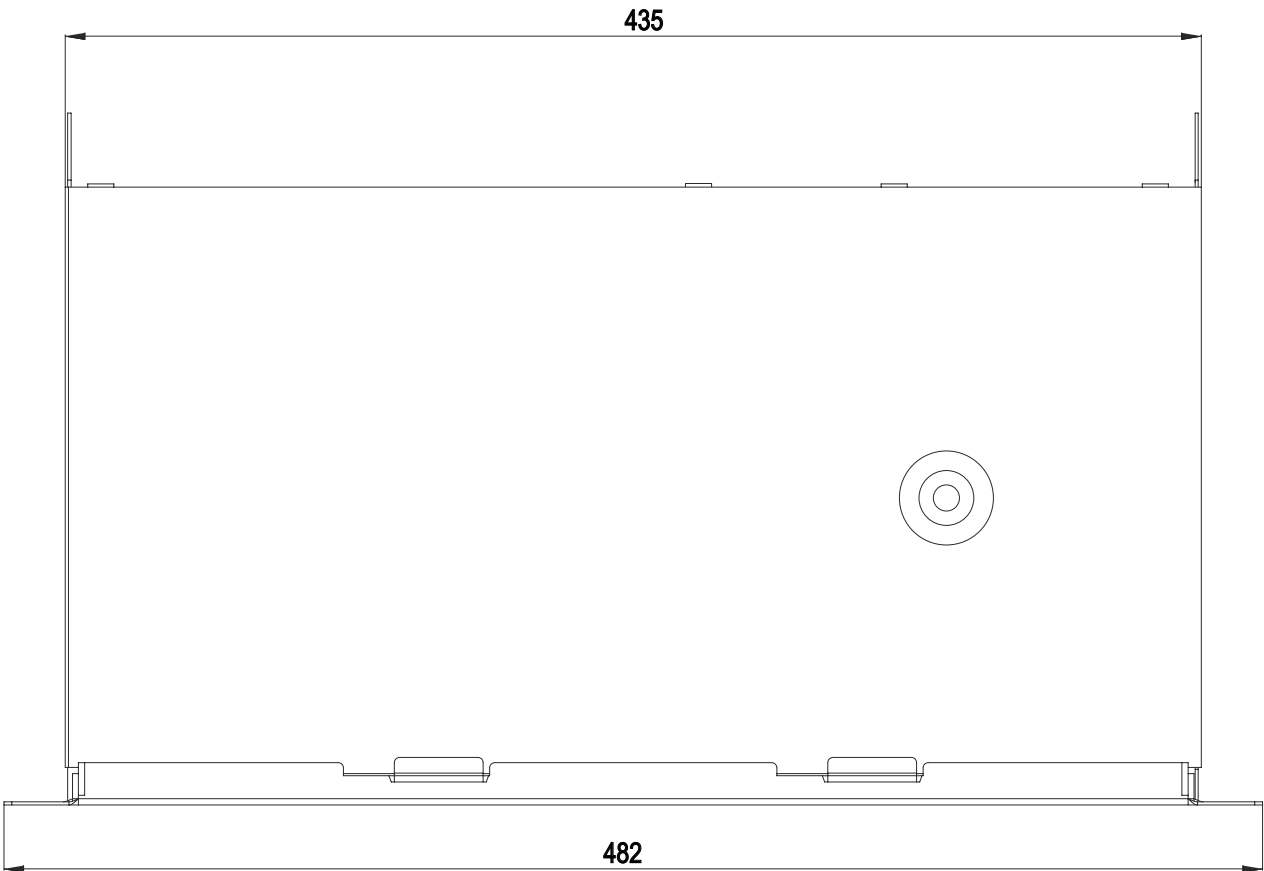
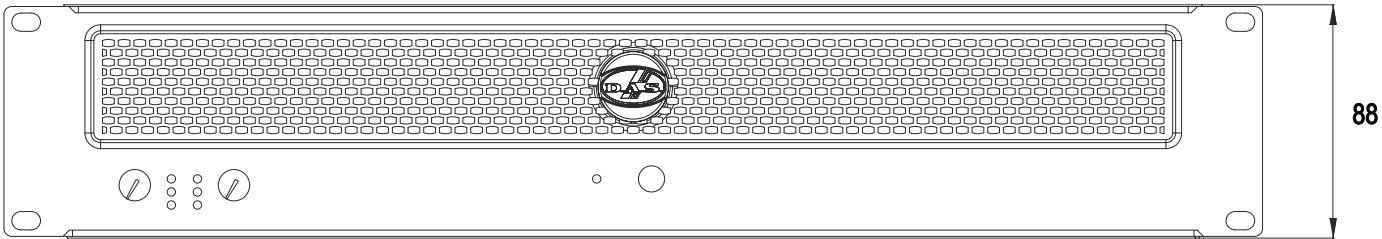
HA Series

Specifications

Rated power / model	HA-500	HA-900	HA-1500	HA-2700	HA-4000
1kHz(HIA)with0.5%THD					
4Ω stereo (per channel)	200W	420W	750W	1350W	2600W
8Ω stereo (per channel)	150W	300W	500W	1000W	1500W
8Ω bridge mono	400W	840W	1500W	2700W	5150W
Performance					
Frequency Response (at 1 Watt)	20Hz-20KHz,+0-1dB				
Total Harmonic Distortion (THD)	<0.5%,20Hz-20kHz				
Intermodulation Distortion60Hz and 7KHz at 4:1from full rated output to -30dB	=/ $<0.35\%$				
Slew Rate	$>20\text{V}/\mu\text{s}$				
Voltage Gain	27dB	33dB	36dB	37dB	37dB
Damping Factor(8ohms)10Hz- 400Hz	>200				
Signal-to-Noise Ratio (below rated power,20Hz to 20kHz. A-weighted)	$>100\text{dB}$				
<i>Crosstalk(below rated power)</i> At 1kHz At 20kHz	-75dB -58dB				
Input Sensitivity for full rated power at 8Ω	0.775V or 1.4V				
<i>Input impedance (nominal)</i> Balanced Unbalanced	20K ohms 10k ohms				
Construction					
Protection	Protection against short circuits, no-load, on/off muting, RF interference.				
Ventilation	Flow-through ventilation from front to back				
Cooling	Internal heat sinks with forced air. Fan cooled, speed regulated, thermal protection				
Power cord specification	Plug: 16A 250V Wire: 3x1.0mm ²			Plug: 16A 250V Wire: 3x1.5mm ²	
Chassis size (unit mm)	482x239x88			482x297x88	
Net weight	9.6kg	10.5kg	10.5kg	15.8kg	21.6kg

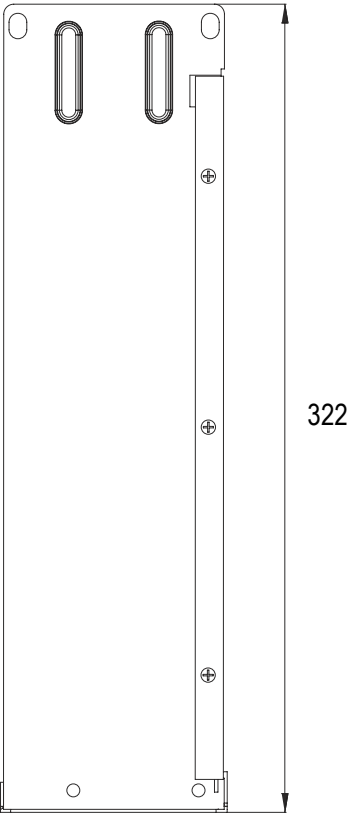
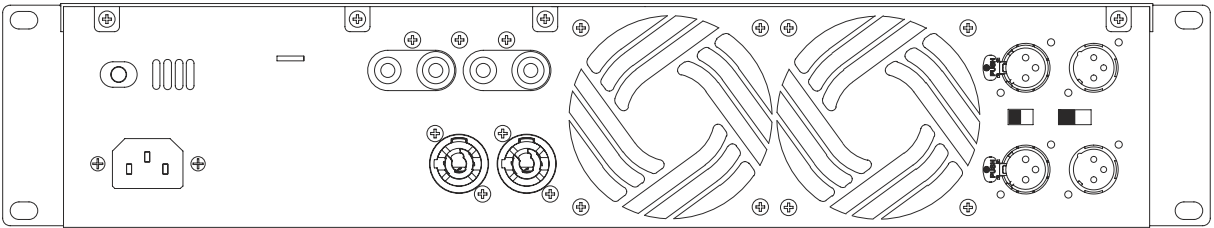
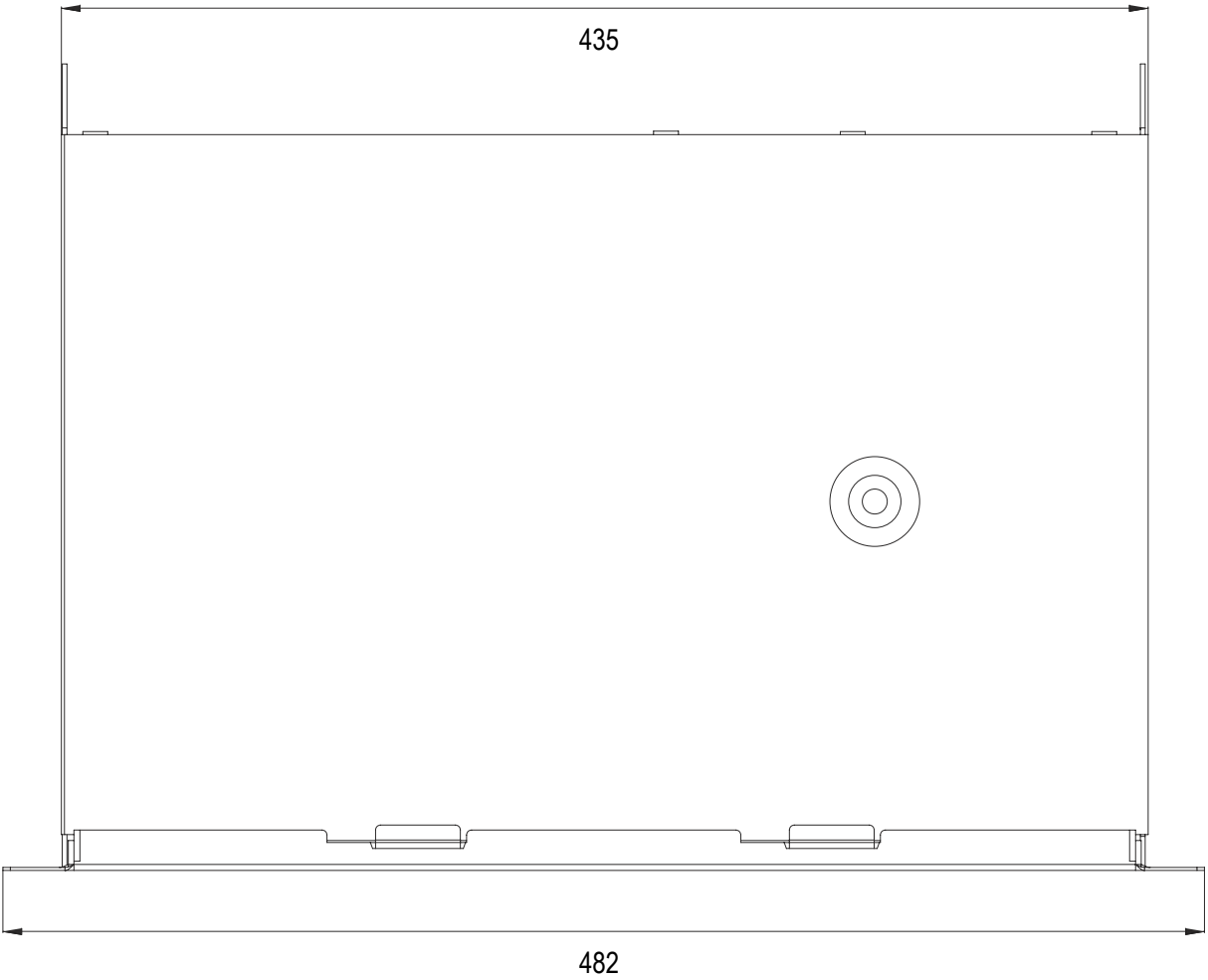
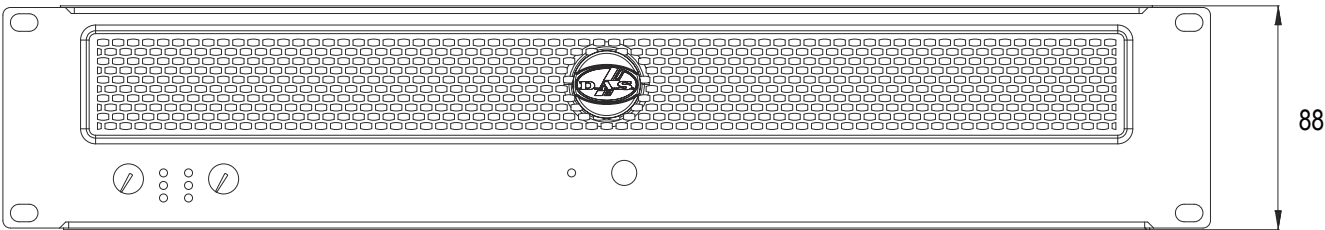
HA Series
Line drawing

Note: Models HA-500, HA-900, HA-1500



HA Series
Line drawing

Note: Models HA-2700, HA-4000





SOUND WITH SOUL