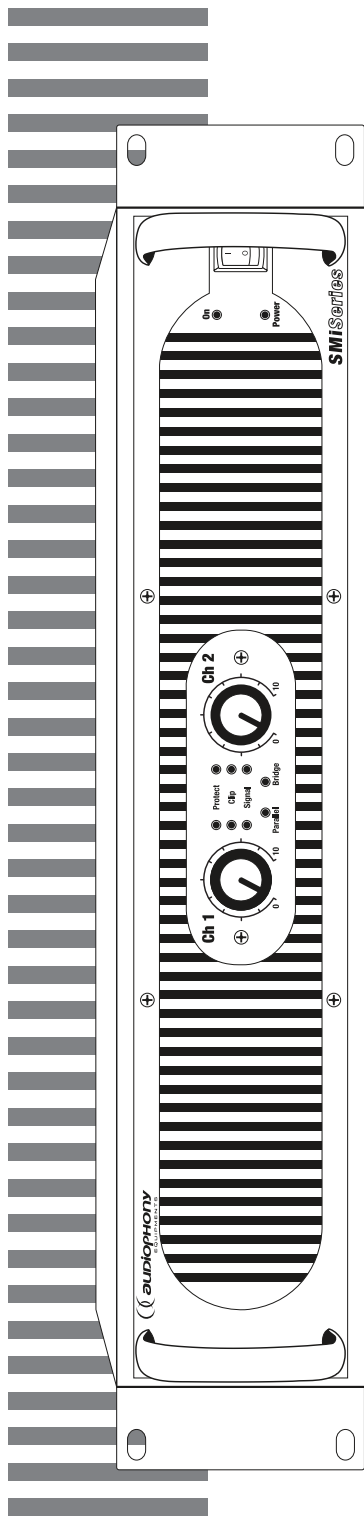


PROFESSIONAL SMPS STEREO AMPLIFIERS



SMiSeries

USER GUIDE

9827/9828/9829 - December 2010 - Version 1.0

1 - Safety information

Important safety information



This unit is intended for indoor use only. Do not use it in a wet, or extremely cold/hot locations. Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to this product or other property.



This product contains non-isolated electrical components. Do not undertake any maintenance operation when it is switched on as it may result in electric shock.



Any maintenance procedure must be performed by a CONTEST authorised technical service. Basic cleaning operations must thoroughly follow our safety instructions.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



WARNING : This unit contains no user-serviceable parts. Do not open the housing or attempt any maintenance by yourself. In the unlikely even your unit may require service, please contact your nearest dealer. In order to avoid any electrical malfunction, please do not use any multi-socket, power cord extension or connecting system without making sure they are perfectly isolated and present no defect.



Risk of electrocution

To prevent the hazard of electric shocks, do not use extension cords, multi-socket or any other connection system without making sure metal parts completely are out of reach.



Sound levels

Our audio solutions deliver important sound pressure levels (SPL) that can be harmful to human health when exposed during long periods. Please do not stay in close proximity of operating speakers.



Recycling your device

- As HITMUSIC is really involved in the environmental cause, we only commercialise clean, ROHS compliant products.
- When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Symbols used



This symbol signals an important safety precaution.



The CAUTION symbol signals a risk of product deterioration.



The WARNING symbol signals a risk to the user's physical integrity. The product may also be damaged.

Instructions and recommendations

1 - Please read carefully :

We strongly recommend to read carefully and understand the safety instructions before attempting to operate this unit.

2 - Please keep this manual :

We strongly recommend to keep this manual with the unit for future reference.

3 - Operate carefully this product :

We strongly recommend to take into consideration every safety instruction.

4 - Follow the instructions:

Please carefully follow each safety instruction to avoid any physical harm or property damage.

5 - Avoid water and wet locations :

Do not use this product in rain, or near washbasins or other wet locations.

6 - Installation :



We strongly encourage you to only use a fixation system or support recommended by the manufacturer or supplied with this product. Carefully follow the installation instructions and use the adequate tools.

Always ensure this unit is firmly fixed to avoid vibration and slipping while operating as it may result in physical injury.

7 - Ceiling or wall installation :

Please contact your local dealer before attempting any ceiling or wall installation.

8 - Ventilation :



The cooling vents ensure a safe use of this product, and avoid any overheating risk.

Do not obstruct or cover these vents as it may result in overheating and potential physical injury or product damage. This product should never be operated in a closed non-ventilated area such as a flight case or a rack, unless cooling vents are provided for the purpose .

9 - Heat exposure :

Sustained contact or proximity with warm surfaces may cause overheating and product damages. Please keep this product away from any heat source such as a heaters, amplifiers, hot plates, etc...

10 - Electric power supply :



This product can only be operated according to a very specific voltage. These information are specified on the label located at the rear of the product.

11 - Power cords protection:



Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at lugs, convenience receptacles and the point where they exit from the fixture.

12 - Cleaning precautions :



Unplug the product before attempting any cleaning operation. This product should be cleaned only with accessories recommended by the manufacturer. Use a damp cloth to clean the surface. Do not wash this product.

13 - Long periods of non use :

Disconnect the unit's main power during long periods of non use.

14 - Liquids or objects penetration :



Do not let any object penetrate this product as it may result in electric shock or fire.

Never spill any liquid on this product as it may infiltrate the electronic components and result in electric shock or fire.

15 - This product should be serviced when :



Please contact the qualified service personnel if :

- The power cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the appliance.
- The appliance has been exposed to rain or water.
- The product does not appear to operate normally.
- The product has been damaged.

16 - Inspection/maintenance :



Please do not attempt any inspection or maintenance by yourself. Refer all servicing to qualified personnel.

17 - Operating environment :



Ambient temperature and humidity: +5 - +35°C, relative humidity must be less than 85% (when cooling vents are not obstructed).

Do not operate this product in a non-ventilated, very humid or warm place.

2 - Introduction

Thank you for purchasing one of the SMi series amplifier.

You are now in possession of a high-quality amplifier, which, we are quite certain, will bring you satisfaction.

The SMi amplifiers are the fruit of many years of Audiophony® experience and efforts.

Nowadays, professional amplifiers tend to favour SMPS due to their low weight, proved reliability and their role in the preservation of the environment via low power consumption and low use of raw materials.

Audiophony® could not ignore this revolution in terms of Switched-Mode Power Supplies.

The SMi amplifiers are easy to use, fast, and their excellent power-to-weight ratio make them incredibly efficient products.

The user guide you are currently reading will allow you to quickly get familiar with the many functions and possibilities offered by the SMi amplifiers.

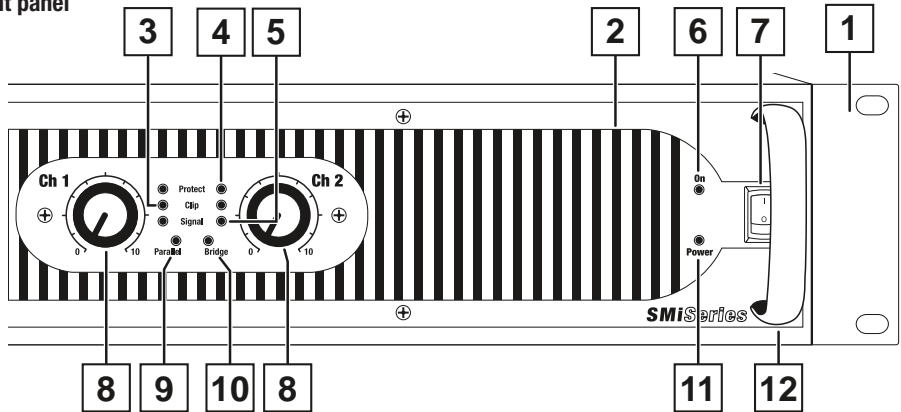
Please keep it within reach during the first few uses to fully benefit from your product.

3 - Technical specifications

- Class AB amplification for SMi600 and 100, Class 2H for SMi1500
- SMPS guaranteeing low weight
- Stereo, parallel or bridge modes
- Independent limiter for each channel
- Extremely precise and independent volume settings for each channel
- LED indicators allowing you to visualise the status of your device
- Cooling fans
- Balanced inputs via XLR and Jack TRS sockets
- Unbalanced inputs via RCA sockets
- 2-pole Speakon®
- Protections: thermoregulation and thermal, short-circuit, current limiter, DC offset, RF protection
- Compatible with 19" racks

4 - Description

4.1 - Front panel



1 Mounting brackets

Allow you to install your amplifier within 19" (482mm) racks.

2 Cooling vents

Allow the air to flow through the amplifier to cool down its internal components.

Please do not obstruct these vents as it may result in overheating and damage the internal components.

3 Clip LED

Lights up when the clip threshold has been reached to indicate the input is saturated and its output signal might be distorted.

Adjust the level output of your source in order to correct this and prevent damages to your speaker and amplifier. The sound quality will drastically improve as well.

4 Protect LED

Lights up to indicate the channel is in protection mode, the output will then be "cut" by an internal relay. Usually the Protect mode is activated when the channel is overheating or serious problems occur in order to protect speaker(s) connected to this channel.

This LED briefly lights up upon activation of your amplifier in order to avoid sending voltage peaks to your speakers during the initialisation of your amplifier.

5 Signal LED

This green and yellow LED lights up when a signal is detected via one of the input.

6 On LED

Lights up to indicate the power supply of your amplifier is activated. The power supply is activated when the ON/OFF power button is positioned onto I.

7 ON/OFF Power switch

Activates/deactivates the power supply unit.

8 Input attenuator

Each channel features an input attenuator allowing you to limit the incoming signal level.

- In "mono bridged" mode, attenuator 1 affects both channels.
- In "Parallel" mode, each attenuators only affects its own channel.

9 Parallel LED

Lights up when your amplifier is in Parallel mode (both channels amplify the same signal).

10 Bridge LED

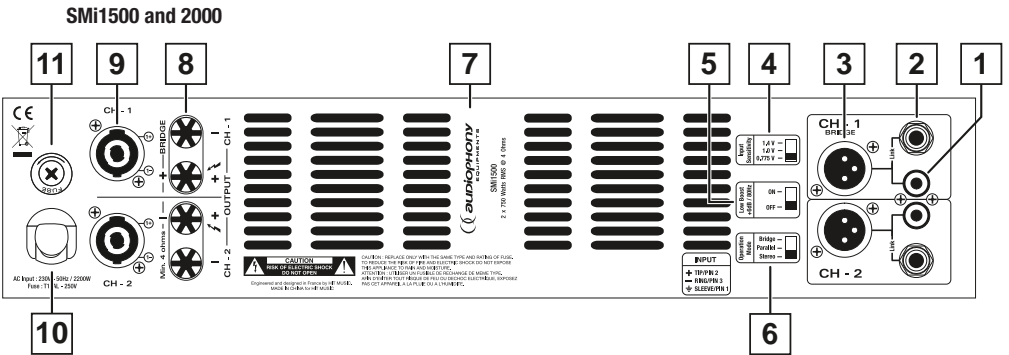
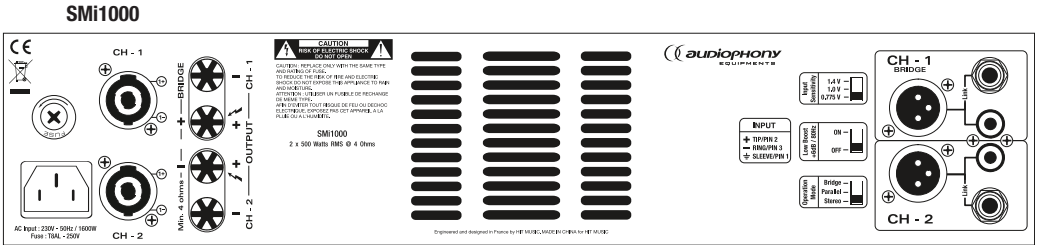
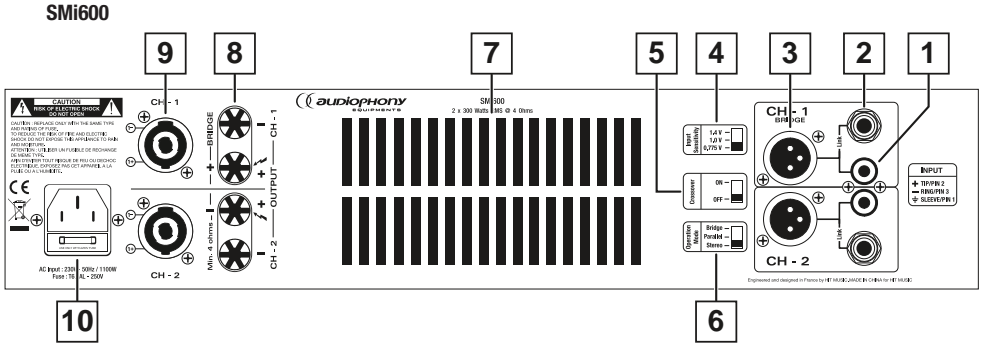
Lights up when your amplifier is in Bridge mode (channel 1 signal is amplified by the sum of the two channels).

11 Power LED

Lights up when your amplifier is connected to an electrical outlet. Lights off when the power button is positioned onto I.

12 Transport handle

4.2 - Rear panel



1 Unbalanced RCA input socket

Allows you to receive asymmetrical line-level signals.

Signals are spread as follows:

- Tip = signal
- Body = Ground

The input sensitivity of this socket is set at 0,775V.

2 Jack TRS input socket

Allows you to receive line-level signals. This socket is able to receive both symmetrical and asymmetrical signals. However, we recommend to always use symmetrical signals as they get you rid of parasitic noises caused by low quality cables. Connect here your male Jack plug. Polarities are spread as follows:

- Tip = Signal +
- Ring = Signal -
- Body = Ground

3 XLR input socket

Allows you to receive line-level signals. This socket is able to receive both symmetrical and asymmetrical signals. However, we recommend to always use symmetrical signals as they get you rid of parasitic noises caused by low quality cables. Connect here your male XLR plug. Polarities are spread as follows:

- Pin 2 = Signal +
- Pin 3 = Signal -
- Pin 1 = Ground

4 Input sensitivity selector

Allows you to select the input sensitivity of both channels. This selector can be used as follows:

- **1,4V** when XLR or Jack TRS inputs are balanced.
- **1,0V** when XLR or Jack TRS inputs are unbalanced.
- **0,775V** when using the RCA input.

Please refer to paragraph 6 for more details about balanced and unbalanced connections.

Note: this selector only affects XLR and Jack TRS inputs.

5 Low Boost selector

Allows you to increase basses levels by 6dB. This increase affects the frequency by 80 Hz.

6 Parallel / Stereo / Bridge selector

Allows you to select the current amplifier mode:

- **Stereo:** Standard mode, each channel amplifies its own signal. (Minimum impedance of 2 Ω).
- **Parallel:** Input 1 signal is identically amplified by both channels. (Minimum impedance of 2 Ω).
- **Bridge:** Both amplification channels are added up to amplify Input 1 signal. (Minimum impedance of 2 Ω).

7 Cooling vents

Allow the air to flow through the amplifier to cool down its internal components.

Please do not obstruct these vents as it may result in overheating and damage the internal components.

8 Output terminals

Allows you to directly connect stripped cables. Use the Red terminals to connect your speaker in "Bridge" mode.

Warning: Dangerous output voltage!

9 Speakon® outputs

Allow you to connect your speakers via cable equipped with Speakon® connectors. Please refer to next chapter for more information about connections.

10 Power input

SMi600 and 1000: plug here the supplied power cord to connect your amplifier to an electrical outlet. The SMi600 also features a fuse.

SMi1500 and 2000: the power cord is already attached to the amplifier to prevent the use of cables not powerful enough.


11 Fuse (only for SMi1500)

If need to replace this fuse, please make sure the new one has the exact same characteristics in order to prevent serious and permanent damage to your amplifier.

5 - Connecting your amplifier

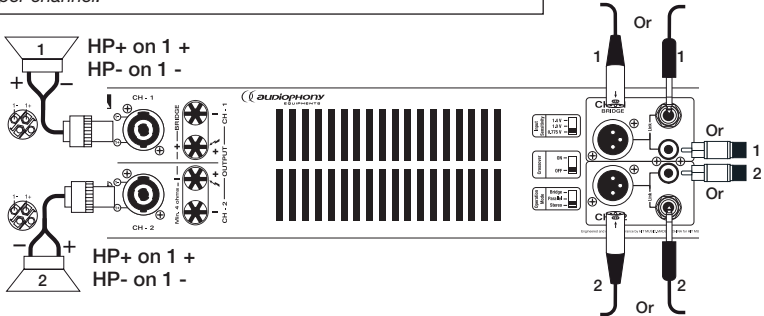
5.1 - Connection via Speakon® connectors in stereo mode

In this mode, each channel amplifies the signal detected via its input. The signal volume output settings of each channel are independent.




Caution: We strongly recommend no to exceed half power when using 2 Ω.

Minimum impedance of 2 Ω per channel.



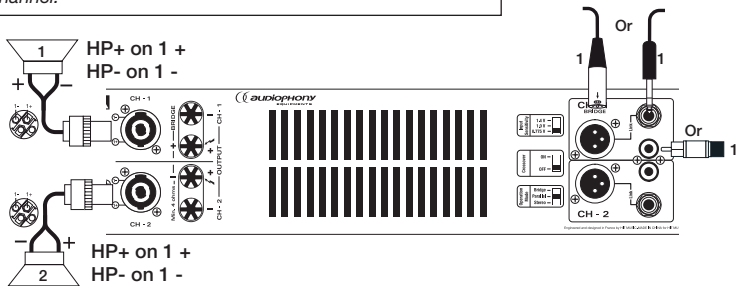
5.2 - Connection via Speakon® connectors in parallel mode

In this mode, each channel amplifies the signal on input 1. The signal volume output settings of each channel are independent.



Caution: We strongly recommend no to exceed half power when using 2 Ω.


Minimum impedance of 2 Ω per channel.



5.3 - Connections in Bridge mode

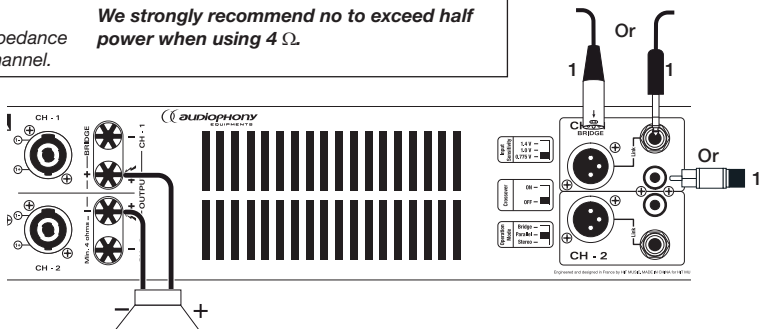
In this mode, signal detected via input one is amplified by the sum of both channels. Settings can be adjusted via Channel 1 attenuator. The main goal of such mode and connections is to get maximum power.

CAUTION: In this mode, the output impedance cannot be lower than 4 Ohms.



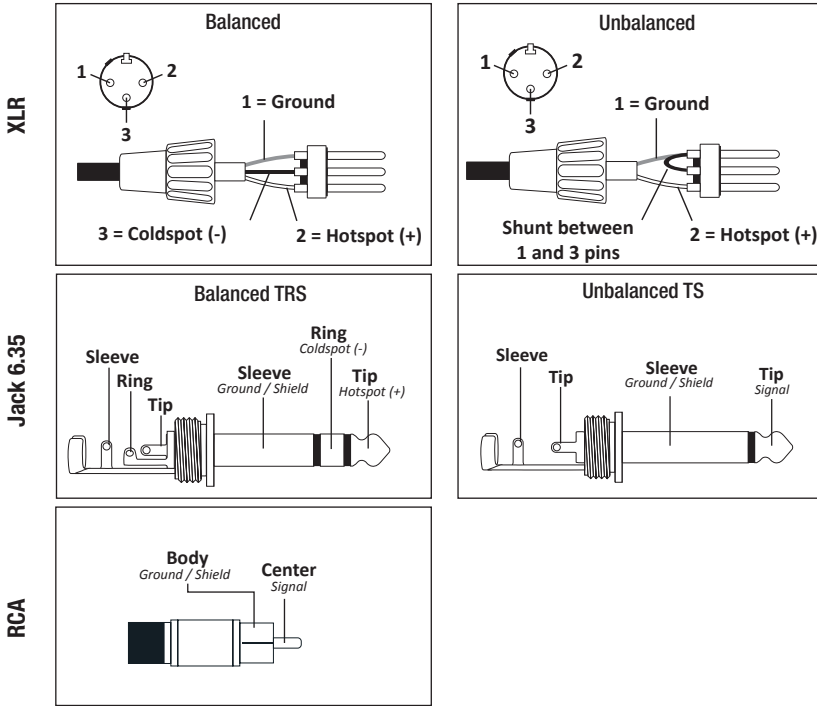
Caution: We strongly recommend no to exceed half power when using 4 Ω.

Minimum impedance of 4 Ω per channel.

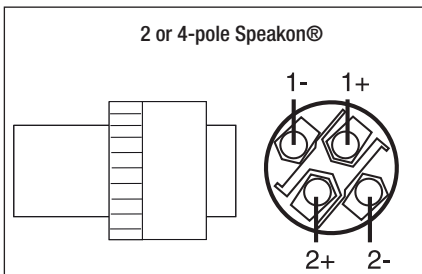


6 - Connectors

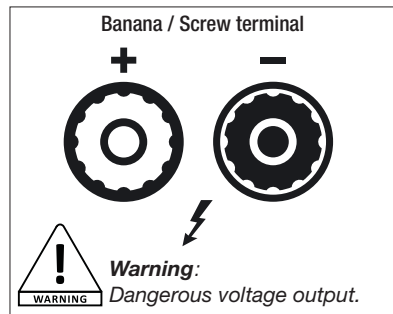
6.1 - Inputs



6.2 - Outputs



Note: Your speakers cables feature 2-pole Speakon® connectors can still be connected to the 4-pole outputs.



Note: When using stripped cables, please make sure no wire comes into contact with both polarities. Please use tinned cables to get rid of eventual short-circuit problems.

7 - Protection systems

Because Audiophony knows what sound professionals need, our SMi amplifiers are equipped with many protection systems to guarantee the best possible lifespan for the internal components of your amplifiers and all devices connected to their outputs.

- SoftStart System

Upon activation of your amplifier or activation of one of the protection system, the Softstart system will slowly increase the output so the speakers will not have to deal with sudden peaks.

- Thermal protection

The thermal protection circuit will open output relays in case of excessively high temperature (more than 105°C). The fans will be at their maximum speed and the amplifier will be functional again once the normal temperature has been reached.

- Short-circuit

This protection takes effect upon detection of a short-circuit via one of the output (defective loudspeaker, poorly isolated speaker cable, etc.).

This system detects short-circuits such as excessively low impedances and reduce the voltage output of your amplifier to prevent the destruction of power transistors.

Affected outputs will be disconnected by the thermal protection system if the short-circuit continues.

- DC Offset protection

The output relays will open automatically to prevent damage to your speakers if one of the channels detects direct current via one of its output connectors.

- VHF Protection (VHF)

Upon detection of a frequency higher than 10 KHz via one of the output (such as microphone feedbacks) the amplifier will open the output relay within 3 seconds. The Protect LED will light up.

The system will test the output again after a 10-second period and let the relay open if the high frequency is still present.

- CLIP / Limiter protection

In the event of an output distortion higher than 0.5%, the limiter will be activated and decrease the input signal level in order to reduce the distortion.

Important notes about the Bridge mode

1 - In Bridge mode, the load impedance must never go below 8 Ohms.

By connecting 2 x 8 Ohms speakers in parallel mode on a single output, this output will have a 4 Ohms impedance.

To determine the impedance connected to an output, please proceed as follows:

In case of 2 x 8 Ohms speakers:

$$\text{CHARGE} = 1 / (1/8 \text{ Ohms} + 1/8 \text{ Ohms}) = 1 / (0,125 + 0,125) = 1/0,25 = 4 \text{ Ohms}$$

2 - In stereo mode, the minimum impedance is 2 Ohms: 4 x 8 Ohms speakers connected in parallel per side.

3 - Never connect the ground of your speakers.



8 - Technical specifications

	Tolerance	SMi600	SMi1000	SMi1500
Power output in stereo mode				
8 Ohms	-2,5%, 10%	2 x 200 W RMS	2 x 310 W RMS	2 x 450 W RMS
4 Ohms	-2,5%, 10%	2 x 300 W RMS	2 x 500 W RMS	2 x 750 W RMS
2 Ohms (minimum)	----	2 x 450 W RMS	2 x 600 W RMS	2 x 1000 W RMS
Power output in mono-bridged mode				
8 Ohms	-2,5%, 10%	1 x 600 W RMS	1 x 1000 W RMS	1 x 1500 W RMS
4 Ohms (minimum)	----	1 x 600 W RMS	1 x 1200 W RMS	1 x 2000 W RMS
Frequency response				
Frequency response	+/- 0,5dB	+0,5dB ; 20Hz-20KHz at 8 Ohms		
THD + N	+/- 0,01%	0,1%	< 0,1%	< 0,1%
Slew Rate	+/- 2V/s	20V/s		
Damping factor	-10/+30	> 100	> 200	> 200
Dynamic range	+/- 5dB	≥ 80dB		
Signal-to-Noise ratio	+/- 5dB	Lower than 85 dB		
Crosstalk	+/- 5dB	≥ 65dB	≥ 70dB	≥ 70dB
Input sensitivity	+/-50mV	1,4V / 1,0V / 0,775mV		
Voltage gain	+/- 5dB	34,2 dB	36,2 dB	37,8 dB
Input impedance				
Input impedance	----	10 KOhms unbalanced / 20 KOhms balanced		
Output impedance	----	≤ 2 Ohms		
Amplification class	----	Class AB	Class AB	Class 2H
Total efficiency	+/- 5%	62%	≤ 65%	≥ 68 %
Cooling system				
Cooling system	----	Fans		
Connectors				
Input	----	Balanced XLR and Jack TRS + Unbalanced RCA		
Output	----	Screw terminal + 2-pole Speakon®		
Settings				
Front panel	----	Power switch / Channels 1 and 2 settings		
Rear panel	----	Mode selector, Input sensitivity selector, Low Boost mode activation		
Indicators	----	Protect (red) / Clip (red) / Signal (green) / Parallel (yellow) / Bridge (yellow) /Power (red) / On (green)		
Protections	----	Short-circuit / Current limiter / DC offset / Thermal / VHF		
Power supply	----	230V AC - 50Hz		
Max. power consumption	----	1100 W	1600 W	2200 W
Dimensions	----	482 x 89 x 350 mm	482 x 89 x 395 mm	482 x 89 x 395 mm
Net weight	----	5,55 Kg	6,85 Kg	9,05 Kg

Because AUDIOPHONY® takes the utmost care in its products to make sure you only get the best possible quality, our products are subjects to modifications without prior notice. That is why technical specifications and the products physical configuration might differ from the illustrations.

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