

HA 300 / HA 600 HI-END REFERENCE POWER AMPLIFIER

Product engineering

Project and topologies

HA300 and HA600 are amplifiers with exceptional characteristics and are part of the Reference EAM LAB. In these amps there is a wealth of cutting-edge technical and design choices for which they have committed since the products for a long period of testing and testing and, thanks to prudent choices of components and materials, have allowed him to become a full title of the best HI-END devices on the market. They differ from each other only for the power factor

circuitry is typically push-pull class AB differential stage with asymmetrical and Wilson current mirror type. The choice of this type is dictated by the high voltage circuit to which they are subjected amplification circuits. We did not want to opt for a solution to more bias voltages due to a better linearity of the frequency response and speed of propagation of the signal that can ensure this technique. In addition, the high polarization allows the amplifiers HAS to work for the first 10 W class A and then go to AB with increasing the current delivered to the load. This factor has allowed us, together with other technical solutions listed below, to maintain the minimum dimensions of the cabinet while having extraordinary powers available with high current delivery.

The signal amplification is entrusted to 12 power devices of last generation for each channel capable of dissipating each over 17A of continuous current. These final, together with all active components of the circuit, have been selected according to the data bandwidth that we wanted very extended. This detail is able to maintain high speed signal transfer between input and output that have never been reached up to this moment. The amplifiers HAS set a new standard for the control of the speaker and the difference is clear with conventional amplifiers. Speed detail and transparency are obvious and easily comparable.

The guarantee of having a sound tonally always correct even at high volumes with these amps became a reality. The frequency response thanks to the goodness of design, technical solutions and the finest materials is always clear and precise in all conditions of use, load and age.

Controls and protections

In addition to the tonal coherence for amplifiers HA 300 HA600 and we wanted to prove that the reliable operation under all conditions. That is connected to loads confusing, albeit that it is used in an inappropriate manner we EAM LAB we wanted a 'power amp in the first place that ensures reliable and trouble-free operation and long-lasting whenever the "ON" button is pressed .

IMPORTANT !

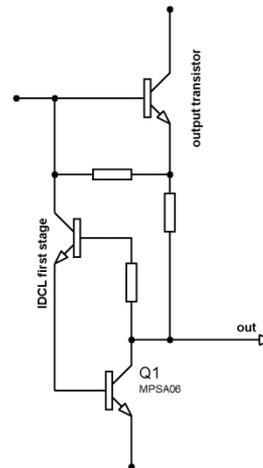
All active protections present in the amplifier circuits are designed so that they can not intervene in any way on the audio signal which could in turn degrade as in many cases of amplifiers are not designed properly. .

IDCL™ (Impedance Detecting & Current Limiting)

IDCL is a protection circuit that constantly monitors the output current of the power output by comparing it with the load impedance. the circuit **IDCL** intervenes in the case in which the output current were to increase for several reasons. With this method you can use Studio300 also with the next short-circuit impedance loads without the slightest hint to failure.

The circuit **IDCL** is not a limiter but a real "protection" and its current intervention is not noticeable on the signal.

A side of the circuit is represented in its simplified part



ILP™ (Intelligent Lock Power)

The ILP system includes in a single circuit 3 different functions.

detects any DC currents present on the end devices, blocking the exits and disconnecting the load connected. In this regard the task is entrusted to 2 Relay 30A with more than 500,000 cycles of contact. ILP is not a simple DC detector but a system of protections more complex able to warn each minimum variation of DC output voltage. even in case of prolonged clipping circuit intervenes. Working in tandem with **IDCL** these two devices are able to provide unmatched reliability for this amplifier.

SVCS™ (Servo Controlled Current State)

The power amplifier must be treated appropriately imposing and its management is entrusted to this circuit. The currents in the game, often very high, they are always kept under control even when the amplifier is turned on to begin work. To prolong the life of exceedingly transformers and capacitors, the power supply voltage is brought to regime only after a few seconds and not all at once. You go from a 30% to 100% in about 3 seconds from power. In addition to this useful function I 'SVCS controls the power supplied from the transformer and limits the operation only in the event of excessive thermal dissipation gradually lowering the yield up to 70% of its capacity.

THL™ (Thermal Heat Limiting)

The temperature of the end devices is handled by this circuit which always guarantees the correct operation even in the event of excessive thermal stress. The circuit is activated when the temperature on the heat sink reaches the threshold of 70 ° c. and makes sure to keep it stable within a tolerance of 10% by acting on micro-variations of the polarization of the final stages. The two LEDs on the front panel indicate the operation of the circuit THL. this is a condition that occurs after a few hours of operation (in some cases after a few minutes, depending on the load connected) and the amplifier in this condition can work continuously without the slightest problem for many hours yet

A thermal circuit breaker at 90 ° c. is however placed in series with the supply line to a further guarantee of safety intervention. In the unlikely event that the circuit THL does go faulty circuit breaker switches off the amplifier and turns it back on automatically when the temperature falls within the parameters of safe operation.

CARATTERISTICHE TECNICHE

(RMS power both channel driven to 20Hz @ 20Khz)

	HA 300	HA 600
8 Ohm	210+210 W	330 + 330
4Ohm	375+375 W	570 + 570
2 Ohm	560+560 W	900 + 900
THD	0.02% (900Hz full power @ 8Ohm)	
Input impedance	47 Kohm bilanciato / 25 Kohm sbilanciato	
THD Vs freq. response	+/- 0,2% tra 5Khz e 20Khz	
S/N ratio	>98db	
DF	>180 (150Hz @ 4 Ohm)	
Max Vout	42V	55 V
Max Current out	42A	78A
Dimensioni	470 x 250 x 310 mm	
Peso	25Kg	28Kg

HA300**HA600****Compsumption (@230 Vac full power)** 6,8A

8,18A

Compsumption (@115 Vac full power) 13A

16.8A

Input connector	XLR neutrik / RCA
Output	binding post 8mm wire uscite
Filter Ac line	Schaffner 16A
Protection	THL – SVCS – ILP – IDCL
Security	90° thermal switch