

daudio



Daudio ASP/AMP

User manual 8 June 2014

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Introduction

The daudio ASP/AMP is a 2 channel high quality amplifier with integrated active filter, specifically designed to let the loudspeaker show what it is capable of. It gets the very best out of the loudspeaker and no additional power amplifier is required. For a stereo system you need a pair, one ASP/AMP for each loudspeaker, a better channel separation is not possible. To complete your system of daudio ASP/AMPs and loudspeakers, all you need is a high quality source with volume control.

The AMP (amplifier part) is designed to meet the needs of customers who demand the utmost in control and musicality from their daudio loudspeakers. It contains a power supply which can deliver a total of 400W continuous and 600W peak power. The amplifier modules are each able to deliver 250W to 4Ω, 180W to 8Ω and a peak current of 14A. As a result, even speaker impedances of 2Ω are no problem. The state-of-the-art amplifier technology achieves an efficiency of 92%. Therefore no heavy heat sinks are required, the small aluminum enclosure is sufficient to prevent the temperature from rising too high.

The amplifiers are equipped with special input stages developed by daudio. These input buffers/preamps have an almost immeasurable distortion of 0.00003%. They are equipped with a separate discrete power supply. The discrete power supply is much faster and more silent than the standard power supplies which are found in virtually all audio electronics even if they are of top quality. The result is an amplifier that possesses all the qualities needed to both control heavy low-impedance woofers as to offer utmost sophistication for the highest frequencies.

The ASP is the active filter for the loudspeakers. The term ASP for the active filter was a conscious choice for our state-of-the-art analog counterpart of the well-known DSP (digital signal processing) and stands for analog signal processor. The filter is equipped with its own discrete power supply, just like the input buffers/preamps. The daudio ASP has been designed to separate the analog signals from your source into the lower frequencies below 150Hz and the mid and high frequencies above. At the same time, equalizing and dipole correction are being applied to guarantee a smooth frequency response when reproducing the sound through the daudio loudspeakers. The dipole operation of the daudio loudspeaker implies that this frequency response will be almost identical across the whole spectrum, even at listening angles off-axis from the loudspeaker. Aside the loudspeaker a weakened copy of the sound will exist, from low to high frequencies even for the bass, which is exceptional. This so-called 'radiation behavior' will ensure that your listening room will be irradiated optimally and with uncolored sound. Anywhere in your room, even outside the preferred listening position, a nice tonal balance will be heard. The daudio ASP is a vital component to achieve this.

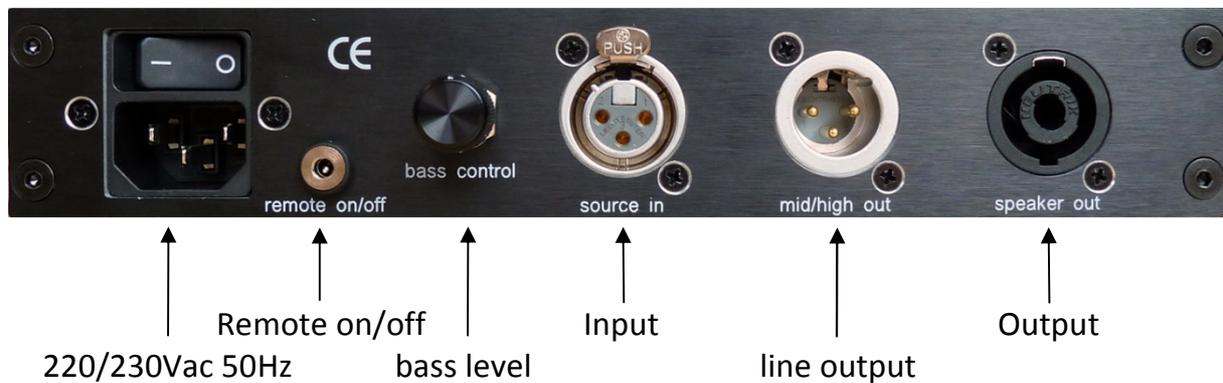
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Electrical safety

On the inside of the housing of electronic equipment, high AC and DC voltages exist. The case should therefore not be opened. daudio accepts no responsibility for injury or damage caused by opening of the housing or by connecting to a power supply voltage other than 220/230Vac 50Hz.

The amplifier needs sufficient space around the housing (at least 2" around) and placed on feet 0.6" high, to enable sufficient heat dissipation at high ambient temperatures.

Connection and operation



Warning: Connect the daudio AMP completely before plugging the power cord into the socket!

Remote on/off

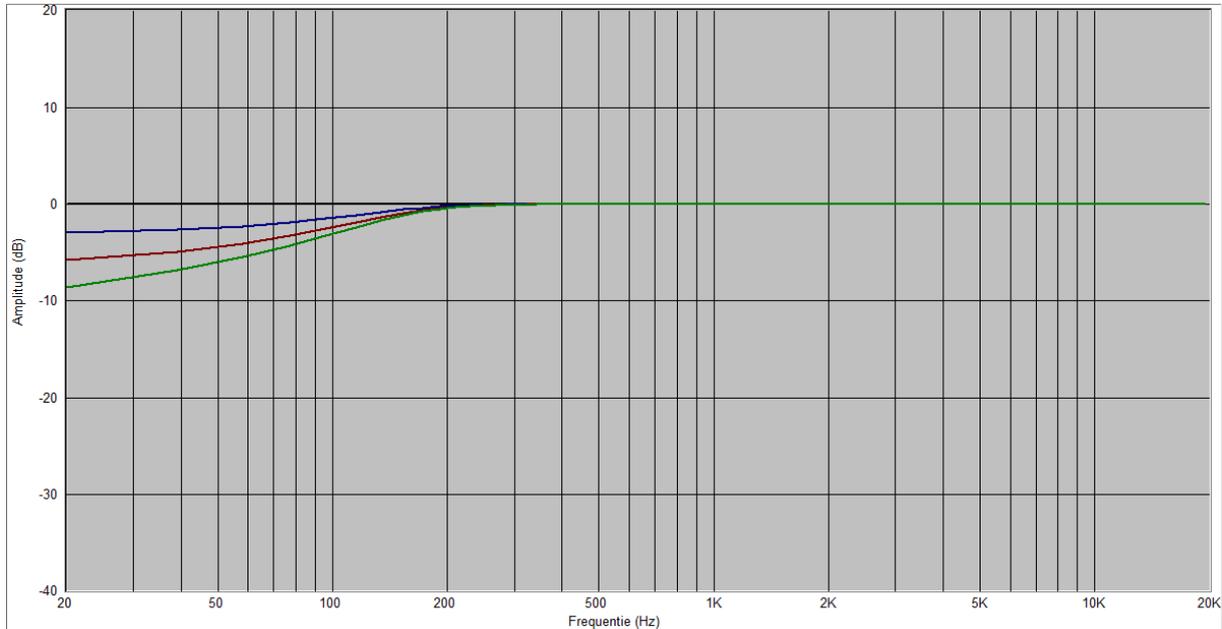
You can put the amplifier on and off with a remotely controlled voltage source of 5Vdc. To be able to use this option you should keep the 220/230Vac switch in the 0-position. A matching cable of 50cm with mini-plug is included with the ASP/AMP. The daudio DAC with volume control is equipped already with the necessary voltage source. By putting the daudio DAC with volume control in standby you switch the ASP/AMP off.

Bass level control

In the picture above you will note a turning knob for 'bass level'. This adjustment is meant to match the amount of dipole correction on your listening room, should there exist too much annoying room resonances or too much bass lift. The adjustment is very precise, for this a 10-turn volume control has been applied.

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In the response curve below it is depicted with colored lines how the adjustment works in the audible range from 20-20.000Hz.



black line: adjustment maximal (10 turns clockwise)

blue line: adjustment two turns less than maximal (counterclockwise)

red line: adjustment five turns less than maximal (adjustment half way)

green line: adjustment minimal (10 turns counterclockwise)

Analoge input

Please use the exceptionally high grade daudio XLR audio cable that came with the daudio ASP AMP to connect your source with volume control.

Analog line output

This output can be left alone unused. Use this XLR-output anyway if you want to connect the ASP mid/high output with your own high quality power amplifier, just in case that you do not want to use the daudio power amplifier for the mid/high section of the loudspeaker.

Speakon loudspeaker output

Please use the daudio loudspeaker cable with Speakon loudspeaker connectors that came with the loudspeakers to connect them to your daudio ASP AMP. The accessory Speakon connectors have four connections +1, -1, +2 and -2. The '1' connections are for the mid/high part of the loudspeaker, the '2' connections are to be connected with the woofers. Take care that you maintain correct polarity, in case you want to use different loudspeaker cables than the ones you got from daudio.

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Technical specifications ASP AMP

Input: Neutrik NC3FD-LX-HE XLR

Line output: Neutrik NC3MD-LX-HE XLR

Output: Neutrik NL4MP Speakon 4P

ASP principle of operation: analog active filtering and equalizing

Input impedance: 100k Ω

Crossover frequency: 150Hz

Filter slope: 24dB/oct

AMP principle of operation: UcD (Universal class D amplifier)

Output power per amplifier module: 250W/4 Ω , 180W/8 Ω

Distortion (0 - 20kHz): 0.02% (0.002% at 1W/4 Ω and 0.001% at 1W/8 Ω)

2-tone intermodulation distortion: 0.01% (18.5kHz + 19.5kHz, 10W, 4 Ω)

Output impedance: 15m Ω (f < 1 kHz), rising to 60m Ω (20kHz)

Bandwidth: 0 - 56kHz (+0/-3dB at all loads)

Amplifier gain: 28.4dB

Amplifier module efficiency: 92%

Total idle losses: approx. 16W

Internal supply: 400 W (600W peak)

Internal supply peak current during 90 seconds: 11.7A rms

Remote on/off: nominal 5Vdc/40mA, > 3.5Vdc pick-up (on), < 0.5V drop-out (off)

Mains: 220/230Vac 50Hz

Dimensions hxbxd: 50 x 236 x 290mm

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