

Sheet\_DPS-500/S\_EN\_1.4\_2011 (Preliminary Datasheet) Update 30/09/2012

## DPS-500/S Mixed D/A power supply For Audio



### Features:

- High efficiency (>90%)
- Low profile (32mm)
- Ultra low noise/EMI
- 150nS power response time
- Full protections
- Power-Unit shield
- Weight 490g.

### Applications:

- Professional amplifiers
- DXA-xx Amps
- 800VA 2x100.000uF/100V  
Trafo replacement

## Introduction

The **DPS-500/S-xx** series, is an Innovative, ultra fast ,regulated switching power supply for **Audio Uses**. It was specifically developed to solve low PSRR on D class amplifiers and Ultra low RFI & EMI induction . To achieve this result, **MDI** laboratories has created a ultra-fast error amplifier power module (hybrid) for driving direct high voltage pwm stage in full analog mode with Two differential feedback (**one per side**). Thanks to a new shielded power-unit and a special wave signal to driving inductor , this PSU have very low RFI irradiation And EMI conductions/Inductions. Moreover, this version has updated with the use of new proprietary inductor (**Ferrite composite, high density**) designed by **MDI** for the "S" version. The **DPS-500/S** can emulate up to 2x100.000uF (**in therms of current peaks**) on DC output, without noise and ripple on D-Class and A-B MosPower audio amplifiers up to 640W rms (4R).

The **DPS-500/S** default configuration provides +/- 64V on DC output. a simple way for other uses is the "**CustomizationForU**", we can provide the DPS-500 with a wide DC VOut range (**+/- 30 ~ +/-76V**), in Single/Dual output voltage mode.

Contact us for more info ([support@audiopower.it](mailto:support@audiopower.it)).

On-board protections ensures a fast supply switch-off for: **short circuit, overload, UVLO, over temperature.**

**Developed and assembled in Italy with high quality materials and manufacturing.**



**RoHS**  
compliant  
2002/95/EC

**CE EMC**

## Specifications

<b>INPUT-VOLTAGE AC LINE REGULATION</b>	100 ~ 130/200 ~ 260VAC DC Output locked (200 to 260VAC,drift=10mV)
<b>FREQUENCY RANGE</b>	50 ~ 60Hz
<b>STANDBY AC CURRENT</b>	3mA(230VAC)- <b>Energy save (CE)</b>
<b>EFFICIENCY</b>	>90% (25°, 230VAC,150KHz PWM,2x5A Load)
<b>DC VOLTAGE (1)</b>	+/- 68V 10A (16A repetitive peak current) (See Power Table)
<b>DC VOLTAGE (2)</b>	+/- 22V 2x200mA (LC-Filtered, unregulated)
<b>DC VOLTAGE (3)</b>	13 ~ 15V 400mA (LC-Filtered, regulated LM317) VN-REF (class D driver Supply)
<b>FAN CN</b>	+12V 200mA filtered fan output (proportional drive)

<b>RIPPLE &amp; NOISE</b>	<b>DC: 1mV rms(100Hz-100mA @68V):</b> 47mV rms(100Hz-5Amp @68V) Both polarity. <b>HF:-84,0dB ( Fo: 150,4 Khz,2x100mA @68V )</b>
<b>SETUP TIME</b>	1000ms (@230VAC)
<b>OVERLOAD</b>	>16A (100ms delay – shut down with auto-recovery) (2 Sec.)
<b>SHORT CIRCUIT</b>	Shut down with auto-recovery (2 Sec.)
<b>OVER TEMPERATURE</b>	80°C ± 5°C (shut down with auto-recovery)
<b>WORKING TEMP/HUMIDITY</b>	0 ~ 40°C 20 ~ 90% RH non-condensing (see note 2)
<b>DIMENSION-WEIGHT</b>	200x84x32mm (LxWxH ref to PCB) Weight=360g. (Without frame)
<b>STANDARD MODEL</b>	<b>DPS-500/S-64V,PCB SOLDER (Black-Blue), Alluminum frame included</b>

### NOTES

- All parameters measured at 230VAC input, rated load and 25°C as ambient temperature. (+/-68V Version).
- For higher ambient temperature (>30°C) a cooling fan is recommended to prevent over-temp. protection. (CN1) Support up to 200mA12V Fan (In proportional mode)
- Performance can be increased adding capacitors to the output voltage **(CN2)**. Max: 2200uF100V per side.
- To use high continuous power or bias current (amps) 2x200mA above, we recommend attaching a heat sink (160x40x40)

### Caution and warning

REPLACE FUSES WITH SAME TYPE AND RATING

12V FAN connector (CN1), is located in the **NOT ISO AREA**.

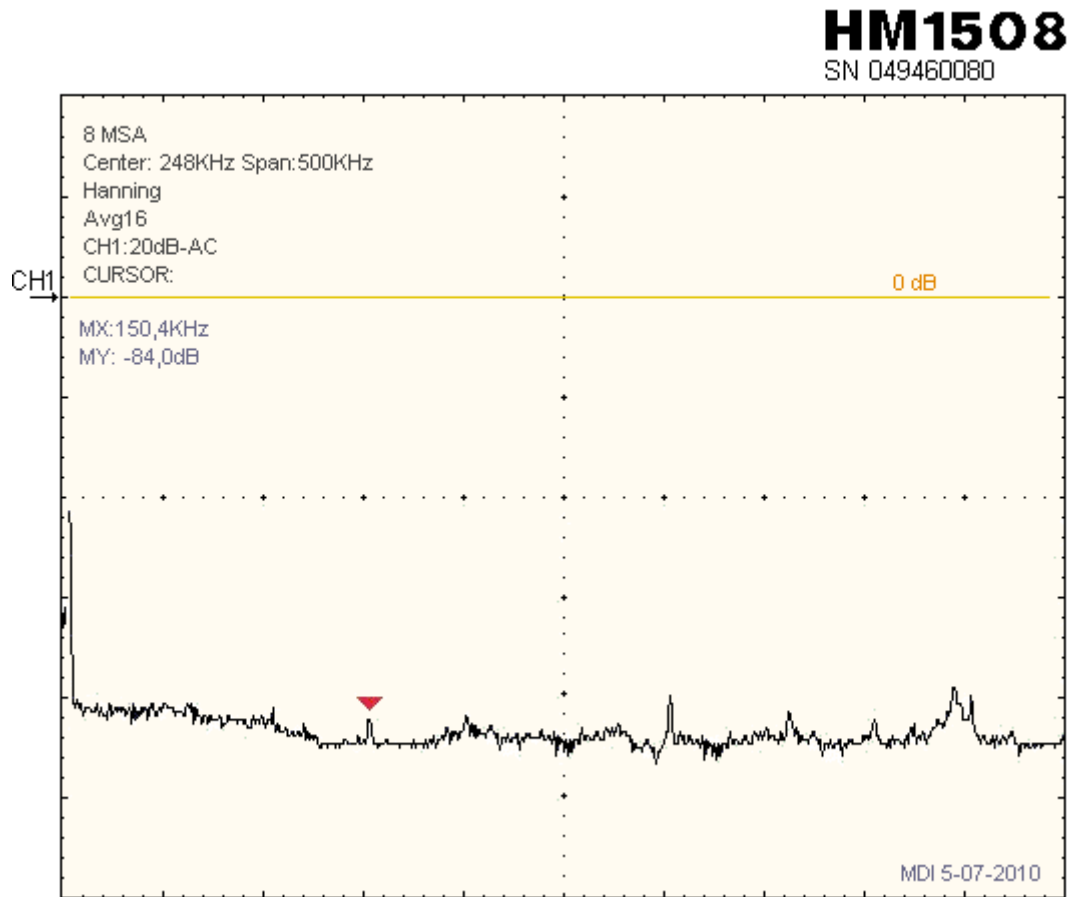
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



Measures

HF Wide Noise Spectrum (Probe @ DC Output)

Conditions: 230VAC ,25° ,50Hz,[2x100mA@68V](#) .



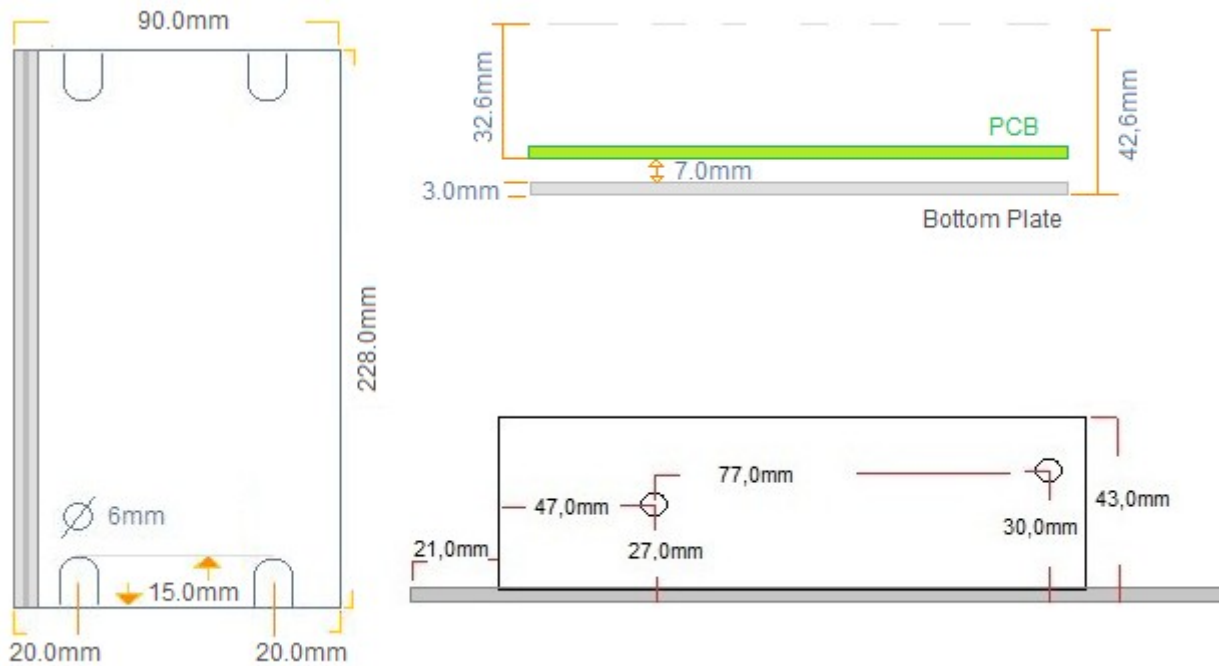
Power Table Measured on our DXA-600 D Class Amplifier, (two amps supplies).

Conditions: 800hz;SIN;Continuos (4R);230VAC 50hz.

DPS-500 Version	V.Output (Idle)	Power output (rms)	Note
DPS-500/S-64V	+/-64V	2x450W	VADJ Set (-2V)
DPS-500/S-68V	+/-68V	2x505W	"" ""
DPS-500/S-72V	+/-72V	2x550W	"" ""

DPS-500 Version	V.Output (Idle)	Power output (rms)	Note
DPS-500/S-D	+/-48V	506W (Bridge) 8R	VADJ Set (-2V)

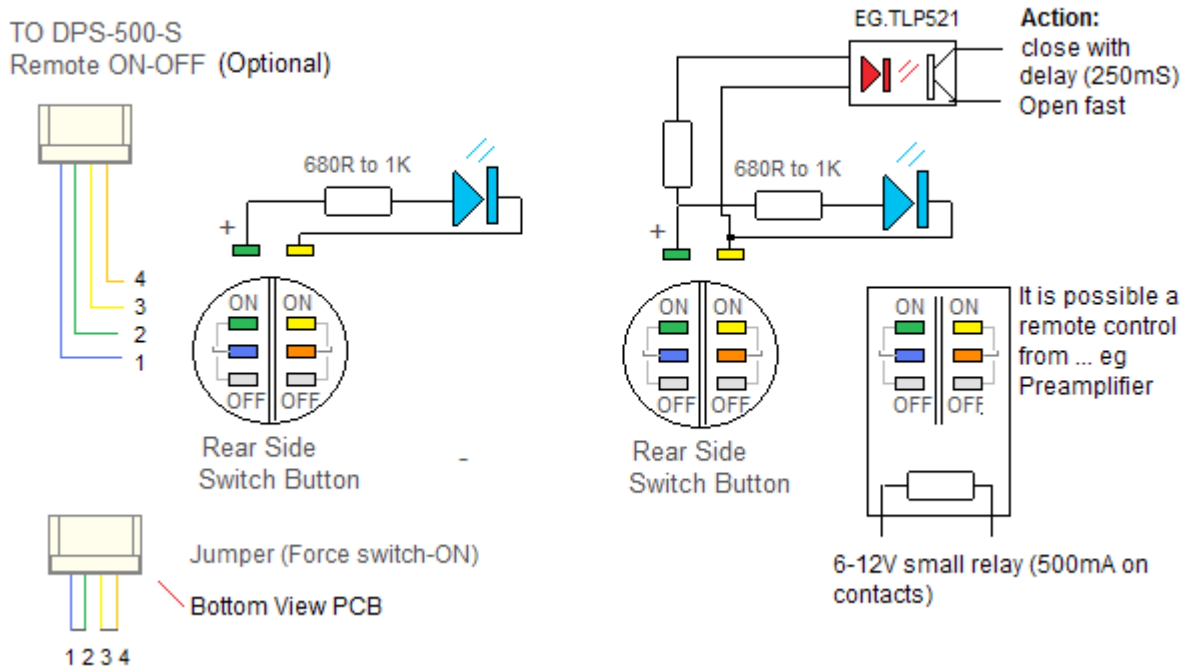
Mechanical



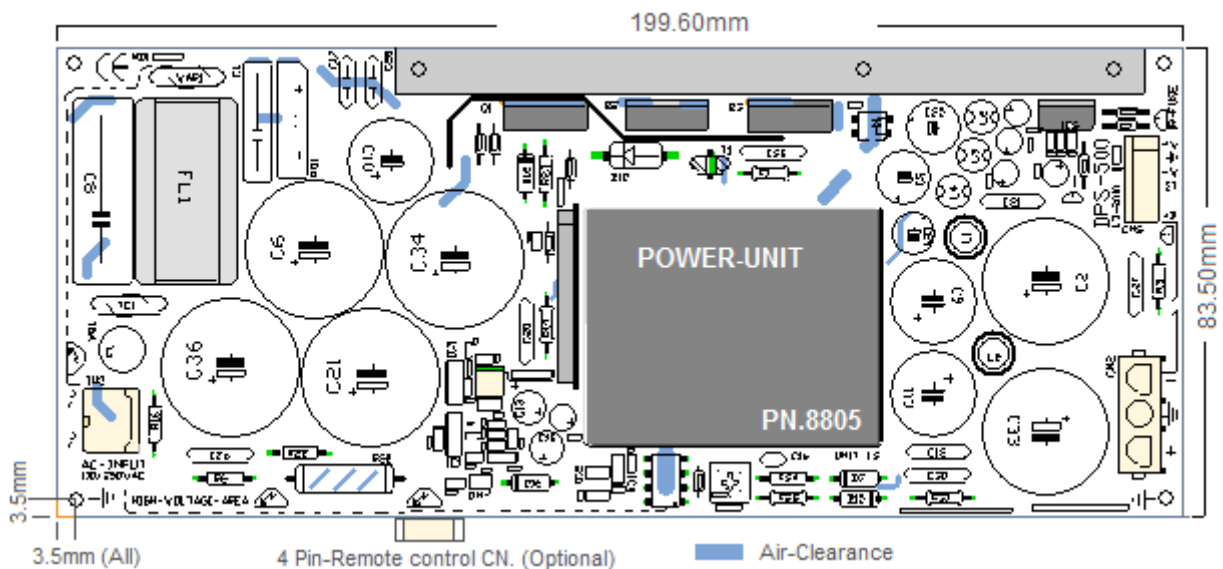
NOTE

To reduce noise and ensure at high output current, it is recommended to fix the **DPS-500/S** on a metal base using all the screws with spacers (7mm - included) between the PCB and the same base.

Remote control Connections (Optional in "/S" version)



**Warning!** This connections are located in **NOT ISO AREA**



It is recommended the usage of properly wire section (2mm) for the power connections (DC / AC)

### DPS-500/S Components Info:

Smd/discrete parts...116

Active Power-Unit (1Kw 3,5Kv)...1

Hybrid module...2

Dual Layers PCB (FR4) Black/Blue color

Dielectric used: Air/Ceramic 1mm

# DPS-500/68V

Digital Audio Equipments

## Package contents:

All connectors (CN1,CN2,CN3,CN4)

1x datasheet.

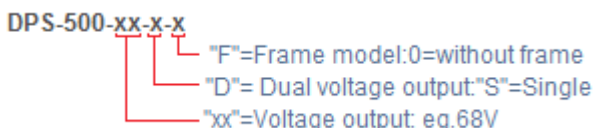
### (Without alluminum frame model,includes:)

5x steel spacers 3MAx6mm

10x steel screws 3MAx5mm

2x steel screws 4MAx10mm.

## Order Info for DPS-500/S-Standard:



**Example.** "DPS-500/S-68-D-F" = (+/-68V,alluminum frame include)

### Note

In case of "S" version (Single Voltage output), can be used two positive outputs (these include independent LC filtering) for decoupling amplifiers .

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### Info

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