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Designed and Manufactured in Australia

FULL DATA SHEET

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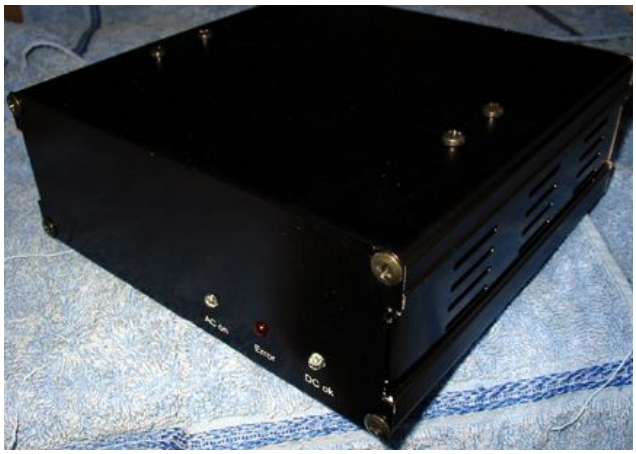
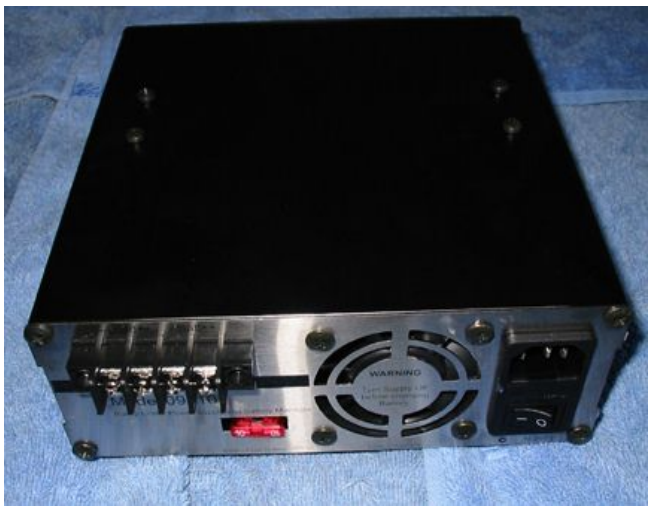
PS812 Desktop Battery Manager



General view of PS812, showing the laser cut stainless steel panels. The case wrapper and heat sink is extruded aluminium. The four 4 mm screws allow a mounting bracket for the radio to be secured to the top for desktop applications. The front plate can be screen printed with your logo and details of the three enunciators LEDs. These are “A.C. On”, D.C. OK” and “Error”. The vents are for the thermostatic fan cooling.

Bottom view. The bottom plate is the heatsink. It rests on four soft plastic feet, suitable for desktop applications. The heat sink temperature is monitored to control the fan and the thermal shutdown circuits. The backup battery fuse is a standard automotive type with a very clear indication of any failure.



Rear view showing IEC fused switch input assembly, thermostatic cooling fan, Battery fuse (red) and the screw terminals for Load and backup battery.

The backplate has been screen printed with a logo and the connection details. The product carries the Ctick mark

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Introduction:

The PS812 desk top supply is designed to supply 13.8 volts nominal D.C. at 8 amps nominal from a 240 volt 50 hertz mains source. In addition, a 1.5 amp battery charger circuit is included, with a complete battery manager to monitor the battery voltage and disconnect it at 10.5 volts to stop deep discharge. It uses a thermostatically controlled fan to assist cooling. ***It is a linear mode supply, not a switch mode.***

Input Voltage:

The input voltage is 240 V AC at 50-Hertz nominal. No auto ranging occurs, and the output degrades gracefully below the minimum A.C. input voltage.

Voltage range (load 8 amps)	215 V A.C. min (209 typical)	265 V A.C. max
Input Frequency range	50-60 Hertz.	
Indication	GREEN LED “Ac on”	

Mains input isolation:

The mains input socket is an IEC fused and switched input, UL recognised and CSA certified. A spare fuse is included in the socket. The input is isolated by a toroidal 50-hertz mains transformer certified to AS 3108.

Output Voltage and Current:

The voltage and current ratings and regulation are held over the full AC input range of 215V to 265 V rms.

Factory Set Output Voltage:

The output voltage is factory set by a 20 turn internal preset to: 13.80 volts at 1.0 amp

Output Regulation (over AC input and D.C. load):

The output drops <300mV from 0 to 8 amps load, 215 AC. to 265 AC V input.

Maximum Current:

The maximum rated load current is 8 amps. The current limit is >9 amps. The supply can be shorted out. No minimum load current is required.

Noise and Ripple:

The ripple and noise is < 7 mV rms in a bandwidth of 150 Mhz. with no discernable 50 or 100 Hz. Component.

Over Voltage protection:

The supply uses a completely independent voltage reference to monitor the output voltage. Should this exceed 16 volts, the outputs are shut down via independent power MOSFET switches. If the fault is an output-induced transient that clears itself, the supply starts up automatically.

Isolation to Ground:

The supply is DC isolated from the case, but RF bypassed with 1UF ceramic capacitors to ground on both rails. These have a 50 V DC rating.

Battery Manager:

The Battery Manager was designed to manage a 6 or 7 Ah S.L.A. type battery typically found in alarm systems as a backup battery. The battery must be rated for a >1.5 Amp inrush. (eg Panasonic type LCR 12V6.5P.)

Charge Current and Volts:

The battery terminals are charged at a maximum current determined by an internal resistor and a PTC. Typical Charge current is 1.4 amps at a battery voltage of 12 V
The maximum battery voltage is limited to 13.8 volts at no load.

DC output OK LED:

When the mains is on, or a charged battery is connected, a green LED shows “Dc ok”.

Under Voltage Lockout:

In battery backup mode, the battery is connected by a Schottky diode to the load. To prevent deep discharge, an internal MOSFET switch disconnects the battery negative rail at ~10.5 volts. The battery is re-connected at 12.5 volts when the mains returns. This hysteresis stops hunting.

Under voltage lockout	10.5 volts typical.
Hysteresis	2 volts.

Reverse Polarity LED:

The load is protected against a reverse battery connection. A red “Error” LED indicates the problem.

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BATTERY fuse:

A 10 amp automotive blade fuse is on the back panel to protect the PS812 against battery short circuits.

Mounting Bracket Holders:

Four tapped holes are provided in the lid for 4x 16 mm mounting screws. ***Do not use a longer screw as it could damage the internal transformer winding.***

Cooling:

Free air circulation must be allowed, as the product is a linear mode power supply and therefore gets warm in operation. The fan assist operates on a nominal baseplate temperature of 40 ^{o}C. If the baseplate exceeds 40 ^{o}C, the fan runs all the time. Keep the side vents and the baseplate clear of obstructions, as the aluminium base is the heatsink. If the temperature is too high, the supply will shut down until it cools down.

Thermal Overload:

Should the power supply overheat for example in too hot an environ, or due to fan failure, the outputs are disconnected until the case temperature drops to a safe value.

Physical:

The front and back panels are 1 mm stainless steel. The front is powder coated black and lettered with “DC Ok”, “AC On”, and ”Error”. The case is black anodised aluminium extrusion. The case sits on 4 soft feet for desk top use. The DC connections are by means of a screw terminal block on the back panel. The case measures:

Height:	70mm plus 10mm foot height
Width:	190 mm
Depth	180 mm

Approval:

The PS812 carries the Australian Ctick Mark. The main isolation transformer is certified to AS3108.