Overview

The PS150 is a 12 Vdc power supply that includes a rechargeable 7 Ah valve-regulated lead-acid (VRLA) battery and charging regulator. Charging power for the PS150 is typically supplied by an unregulated solar panel, AC/AC transformer, or AC/DC converter. The PS150 provides charging with temperature compensation for optimal charging and battery life. A maximum power point tracking algorithm is incorporated for solar inputs to maximize available solar charging resources.

Benefits and Features

- Protects against high-amperage and high-voltage damage to power supply
- Battery reversal protection
- Allows simultaneous connection of two charging sources (e.g., solar panel, ac wall charger)
- ETL listed Class 2 power supply

Detailed Description

The PS150 is a micro-controller-based smart charger with temperature compensation that optimizes battery charging and increases the battery’s life. Two input terminals enable simultaneous connection of two charging sources. They also incorporate a maximum power point tracking algorithm for solar inputs that maximizes available solar charging resources.

The PS150 has several safety features intended to protect the charging source, battery, charger, and load devices. Battery-reversal protection is included, as well as ESD and surge protection on all of the PS150 inputs and outputs.

The PS150 replaced the PS100.

Specifications

<table>
<thead>
<tr>
<th>Operational Temperature</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40° to +60°C (VRLA battery manufacturers state that “heat kills batteries” and recommend operating batteries at ≤ 50°C)</td>
<td>19.3 x 7.6 x 10.6 cm (7.5 x 3 x 4.2 in.)</td>
</tr>
</tbody>
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For comprehensive details, visit: [www.campbellscl.com/ps150](http://www.campbellscl.com/ps150)
### CHARGE - CHARGE Terminals (AC or DC Source)

<table>
<thead>
<tr>
<th>Source</th>
<th>Range</th>
<th>Limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>18 to 24 VRMS</td>
<td>Internally limited to 1.2 ARMS</td>
</tr>
<tr>
<td>DC</td>
<td>16 to 40 Vdc</td>
<td>Internally limited to 0.85 Adc</td>
</tr>
</tbody>
</table>

### SOLAR Terminals (Solar Panel or Other DC Source)

| -NOTE- | Battery voltages below 8.7 V may result in < 3.0 A current limit because of fold-back current limit. |

| Range | 15 to 40 Vdc |

### Maximum Charging Current

- AC: 4.0 Adc typical (3.2 to 4.9 Adc depending upon individual charger)
- DC: 0.85 Adc

### Quiescent Current

- No Charge Source Present: 160 μA at 13.7 Vdc
- No Battery Connected: 930 μA at 30 V input voltage (ac or dc)

### Battery Charging

- FLOAT Charging: \[ V_{\text{batt}}(T) = 13.65 \text{ V} - (24 \text{ mV}) \times (T - 25) + (0.24 \text{ mV}) \times (T - 25)^2 \]
- Accuracy: ±1% (on charging voltage over -40° to +60°C)

### Power Out (+12 Terminals)

- Voltage: Unregulated 12 V from battery (4.65 A solid-state circuit breaker)
- Standards: ETL Listed Class 2 power supply

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