



## PS150 and CH150

Power Supply and Charge Controller



# Optimized Power Performance

Manages voltage and amperage to protect battery

## Overview

The PS150 and CH150 are smart charge controllers that manage amperage and voltage for safe, optimized battery charging from a solar-panel or ac power source. The PS150 includes a 12 Vdc, 7 AH

valve-regulated lead-acid (VRLA) battery, while the CH150 is for use with a separate larger battery such as our BP12, BP24, or a user-supplied battery.

## 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

## Technical Description

The PS150 and CH150 are micro-controller-based smart chargers with temperature compensation that optimize battery charging and increase 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 maximize available solar charging resources.

The PS150 and CH150 have several safety features intended to protect the charging source, battery, charger, and load devices. Both

the SOLAR – G and CHARGE – CHARGE input terminals incorporate hardware current limits and polarity-reversal protection. A 5 A fuse protects the CHARGE – CHARGE inputs in the event of a catastrophic AC/AC or AC/DC charging source failure. A 4.65 A solid-state circuit breaker protects the 12 V output terminals of the charger in the event of an output load fault. The PS150 and CH150 also have battery-reversal protection, and include ESD and surge protection on all of its inputs and outputs.

More info: 435.227.9120

[www.campbellsci.com/ps150](http://www.campbellsci.com/ps150)



# Ordering Information

## Power Supplies

- CH150** 12 V Charging Regulator. Choose a warranty option (see below).  
**PS150** 12 V Power Supply with Charging Regulator and 7 Ah Sealed Rechargeable Battery. Choose a warranty option (see below).

### Warranty Options (choose one)

- SW** Standard 1 Year Warranty. See manual for full warranty policy.
- XW** 4 Year Warranty Extension (available only at the time of original product purchase).

## 12 Vdc Battery Packs for CH150

- BP12** 12 Ah Sealed Rechargeable Battery with Mounts  
**BP24** 24 Ah Sealed Rechargeable Battery with Mounts

## External Battery Cable

- 6186** Battery Cable for connecting an external 12 Vdc flooded battery such as a deep-cycle marine or RV battery.

## Wall Chargers

- 29796** Wall Charger 24 Vdc 1.67 A Output, 100 to 240 Vac, 1A Input, 5 ft Cable. Must choose a power plug option (see below).  
**22110** Wall Charger 24 Vdc 1.67 A Output, 100 to 240 Vac, 1 A Input for prewired enclosure. Must choose a power plug option (see below).

### Power Plug Options (choose one)

- US** US/Canada Plug
- IP** 7 International Plugs

## Unregulated Solar Panels

*Regulated solar panels such as the SP10R are not recommended. Must choose a cable termination option and a mounting option.*

- SP10** 10 W Solar Panel with 15 ft cable  
**SP20** 20 W Solar Panel with 15 ft cable  
**SP50-L** 50 W Solar Panel with user-specified cable length (used with the CH150 only). Enter length, in feet, after the -L. A 20 ft length is typical; maximum length is 50 ft.

### Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to the CH150 or PS150.
- PW** Cable terminates in a connector that attaches to a prewired enclosure.
- C** Cable terminates in a connector that attaches to an ET station or the CS110 Electric Field Meter (only available for the SP10).

### Mounting Option (choose one)

- SM** Standard Mounting Kit
- EM** Extended Mounting Kit

## Adapters

*Only one adapter can be used at a time.*

- A100** Null Modem Adapter for powering peripherals and external devices at non-datalogger sites such as repeater stations.  
**A105** 12 V Terminal Expansion Adapter that increases the number of 12 V and ground terminals available on the PS150 or CH150.

# Specifications

- View EU Declaration of Conformity at: [www.campbellsci.com/ch150](http://www.campbellsci.com/ch150) or [www.campbellsci.com/ps150](http://www.campbellsci.com/ps150)
- Operational Temperature Range\*: -40° to +60°C
- Dimensions:

|       | Height           | Length           | Width           |
|-------|------------------|------------------|-----------------|
| PS150 | 10.6 cm (4.2 in) | 19.3 cm (7.5 in) | 7.6 cm (3 in)   |
| CH150 | 10 cm (3.9 in)   | 7.5 cm (3 in)    | 3.7 cm (1.5 in) |

## Battery Charging

- FLOAT Charging:  $V_{batt}(T) = 13.65 - (24 \text{ mV}) \times (T - 25) + (0.24 \text{ mV}) \times (T - 25)^2$   
Where T is temperature in degrees Celsius ±1% accuracy on charging voltage over the -40° to +60°C range
- Accuracy: ±1% accuracy on charging voltage over -40° to +60°C

## CHARGE – CHARGE Terminals (AC or DC Source)

- AC: 18 to 24 V RMS internally limited to 1.2 A RMS
- DC: 16 to 40 Vdc internally limited to 0.85 A dc

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

- Input Voltage Range: 15 to 40 Vdc
- Maximum Charging Current: 4.0 Adc typical; 3.2 Adc to 4.9 Adc depending upon individual charger

## 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)

## Power Out (+12 terminals)

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

\*VRLA battery manufacturers state that "heat kills batteries" and recommend operating batteries ≤50°C.

