

**PS12LA, PS512M, CH12R, CH512R
POWER SUPPLIES AND CHARGING REGULATORS
INSTRUCTION MANUAL**

06/00

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PS12LA, PS512M, CH12R, CH512R

Power Supplies and Charging Regulators

1. General Description

The PS12LA and PS512M are 12 volt power supplies that include the charging regulator and a 7 amp hour battery. The CH12R and CH512R are charging regulators that are used with a Campbell Scientific battery pack such as the BP12 or BP24 or with a user-supplied battery. Charging power is typically supplied by a CSI Model 9591 AC Transformer or by an MSX10 or MSX20 solar panel.

The PS512M and CH512R also have two 9-pin connectors that provide a null modem for use in a site, without a datalogger, that connects and powers two Campbell Scientific peripherals that would normally be connected to a datalogger. These peripherals are typically modems linking different communications technologies; e.g., telephone to radio.

2. Specifications

PS12LA, PS512M, CH12R, CH512R

Input Voltage (CHG terminals) 15 to 28 VDC or 18 VAC RMS

Battery Connections

Charging Output Voltage: Temperature compensated float charge for 12 V Battery

Temperature Compensation Range: -40 to +60°C

Charging Current Limit: 1.2 Amps typical

Power Out (+12 terminals)

Voltage: Unregulated 12 V from Battery

Current Limited w / 3 A Thermal Fuse: > 3 A @ < 20°C

3 A @ 20°C

2.1A @ 50°C

1.8 A @ 60°C

Battery Packs

Operating Temperature Range: -40 to +60°C

Capacity:

PS12LA 7 Amp hours

BP12 12 Amp hours

BP24 24 Amp hours

AC Transformer: CSI Model No. 9591

Input Voltage: 120 VAC

Output Voltage: 18 VAC RMS

Output Current (max): 1.2 Amps RMS

Protection (automatic reset): 85°C thermal reset breaker

UL Approval: UL-1950

3. Wiring

An internal or external battery is connected to the charger by means of the INT (Internal) or EXT (External) connectors, as shown in Figure 1. An “external battery” cable comes with the charger that allows connecting another battery to the charger to provide power if the main battery is removed. The red lead connects to the positive battery terminal and the black lead connects to the negative terminal.

WARNING

Reversal of polarity of external battery will damage the PS12LA or PS512M.

It is possible to leave two batteries connected. The battery connections are diode isolated (Figure 3-2); however, if one of the batteries fail, it could draw all the charging current and the other battery will be discharged.

CAUTION

A battery **must** be attached for the charger to function correctly as a power supply.

The leads from the transformer or solar panel are connected to the CHG terminals. Polarity does not matter; either lead can be connected to either terminal.

The wires that connect power to the datalogger and/or peripherals are connected to the +12 and ground (⏏) terminals.

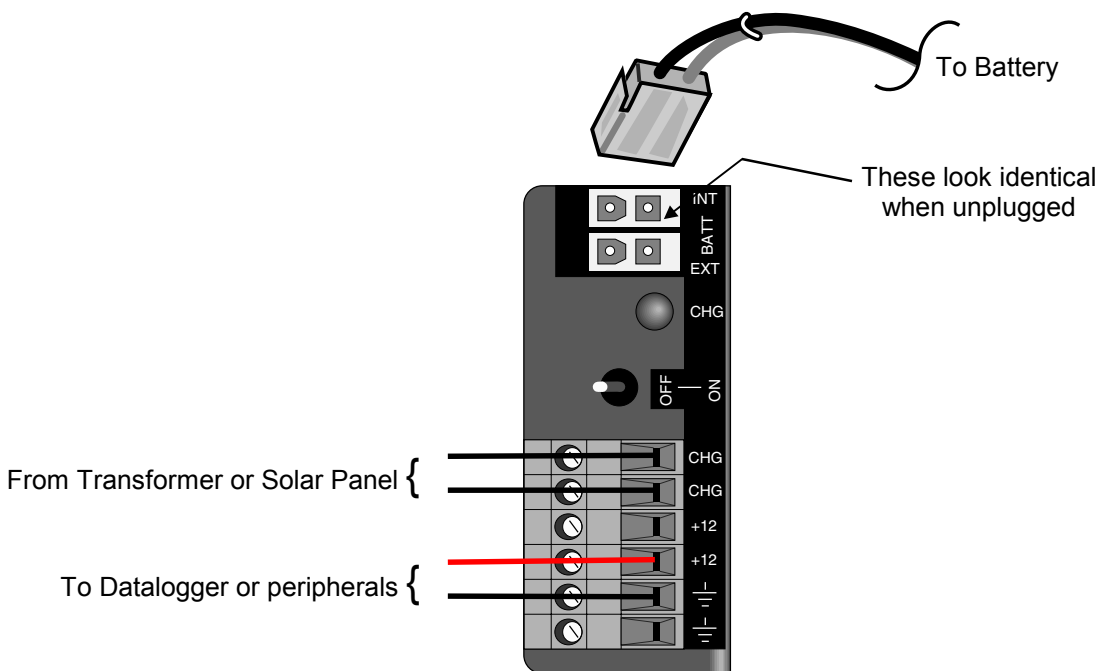


FIGURE 1. Wiring to Charger

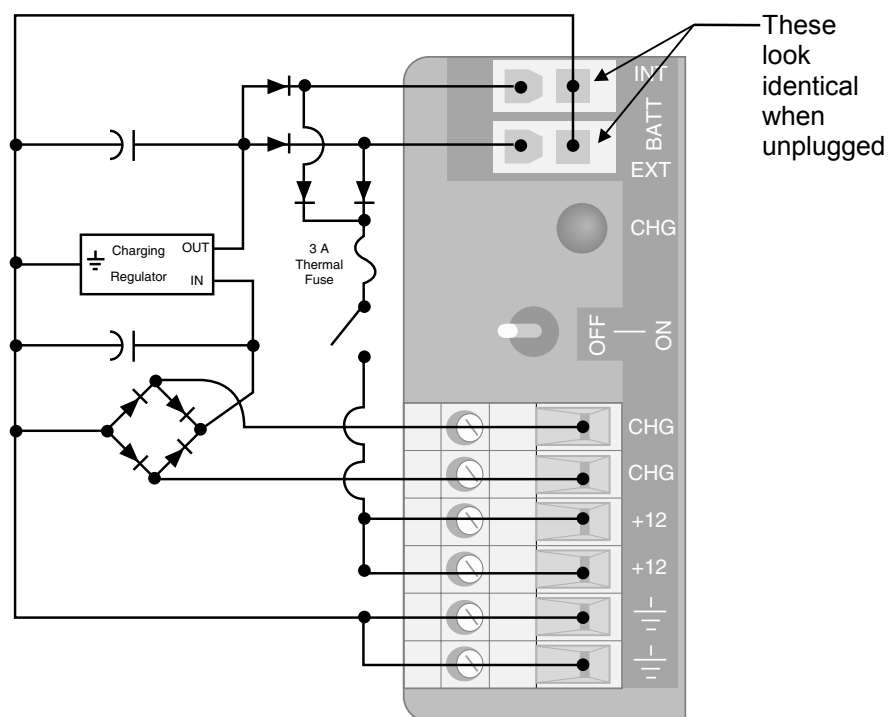


FIGURE 2. Simplified Charging Circuit Schematic

4. Null Modem on PS512M and CH512R

The PS512M and CH12R have two 9-pin CS I/O ports on them with a null modem between them. The ports are used to connect two 9-pin devices that would normally be connected to the CS I/O port on a Campbell datalogger. The charger supplies 12 volts and 5 volts to the appropriate pins on the connector for powering the connected devices.

CAUTION

This cannot be used as a null modem between two RS-232 devices.

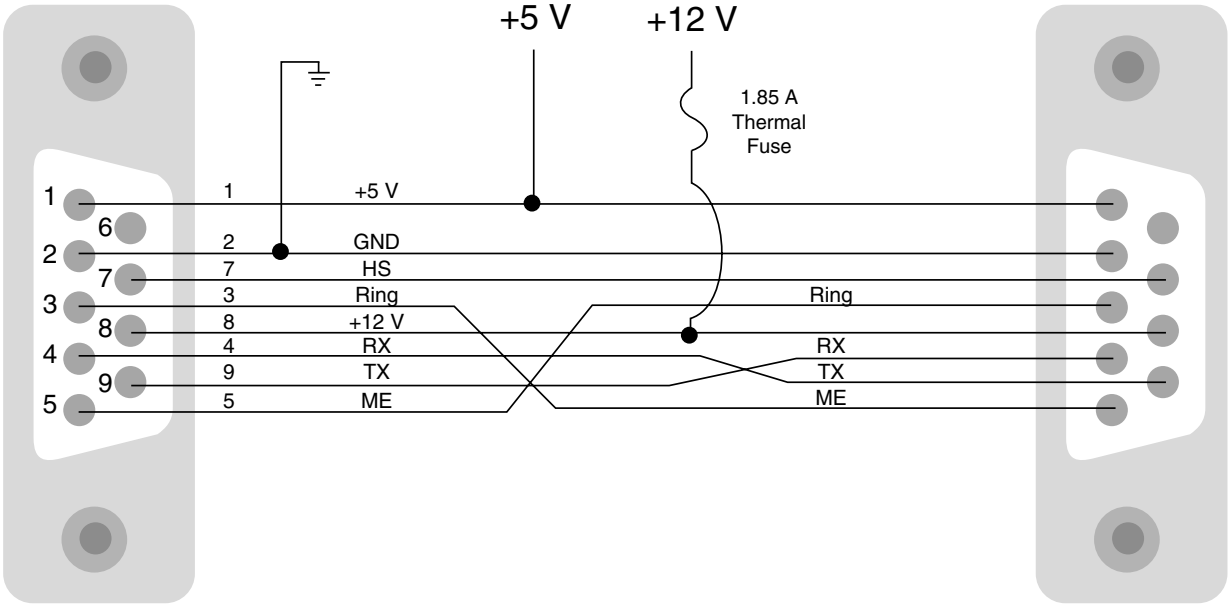


FIGURE 3. Null Modem Connections