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

30/06/00

WARRANTY AND ASSISTANCE

The **PS12LA, PS512M, CH12R, CH512R POWER SUPPLIES AND CHARGING REGULATORS** are warranted by CAMPBELL SCIENTIFIC (CANADA) CORP. ("CSC") to be free from defects in materials and workmanship under normal use and service for **twelve (12) months** from date of shipment unless specified otherwise. CSC's obligation under this warranty is limited to repairing or replacing (at CSC's option) defective products. The customer shall assume all costs of removing, reinstalling, and shipping defective products to CSC. CSC will return such products by surface carrier prepaid. This warranty shall not apply to any CSC products which have been subjected to modification, misuse, neglect, accidents of nature, or shipping damage. This warranty is in lieu of all other warranties, expressed or implied, including warranties of merchantability or fitness for a particular purpose. CSC is not liable for special, indirect, incidental, or consequential damages.

Products may not be returned without prior authorization. To obtain a Return Merchandise Authorization (RMA), contact CAMPBELL SCIENTIFIC (CANADA) CORP., at (780) 454-2505. An RMA number will be issued in order to facilitate Repair Personnel in identifying an instrument upon arrival. Please write this number clearly on the outside of the shipping container. Include description of symptoms and all pertinent details.

CAMPBELL SCIENTIFIC (CANADA) CORP. does not accept collect calls.

Non-warranty products returned for repair should be accompanied by a purchase order to cover repair costs.

CAMPBELL SCIENTIFIC
CANADA CORP.
11564 - 149 street - edmonton - alberta - T5M 1W7
tel 780.454.2505 fax 780.454.2655
www.campbellsci.ca

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 CSC Model L9591 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 +60ºC
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 +60ºC
Capacity:	
PS12LA	7 Amp hours
BP12	12 Amp hours
BP24	24 Amp hours

AC Transformer: CSC Model No. L9591

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.

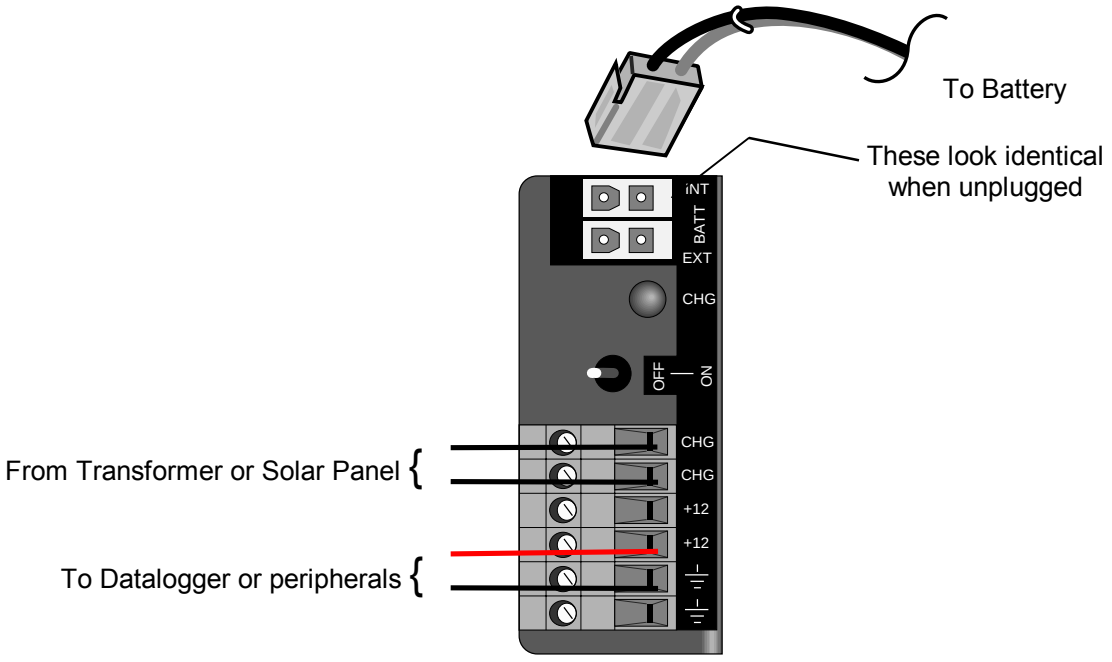

FIGURE 1. Wiring to Charger

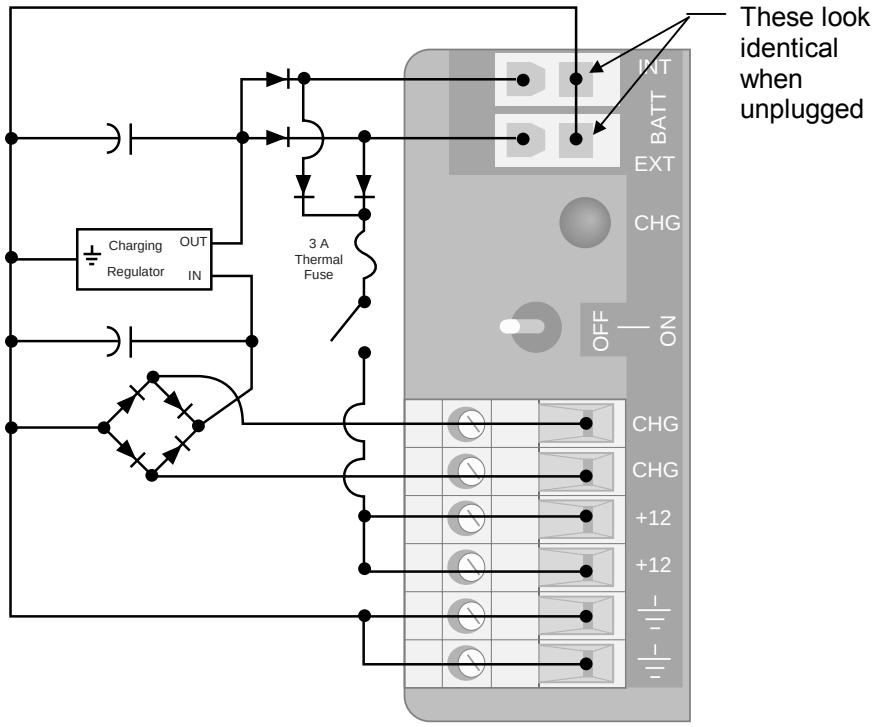

FIGURE 2. Simplified Charging Circuit Schematic

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.

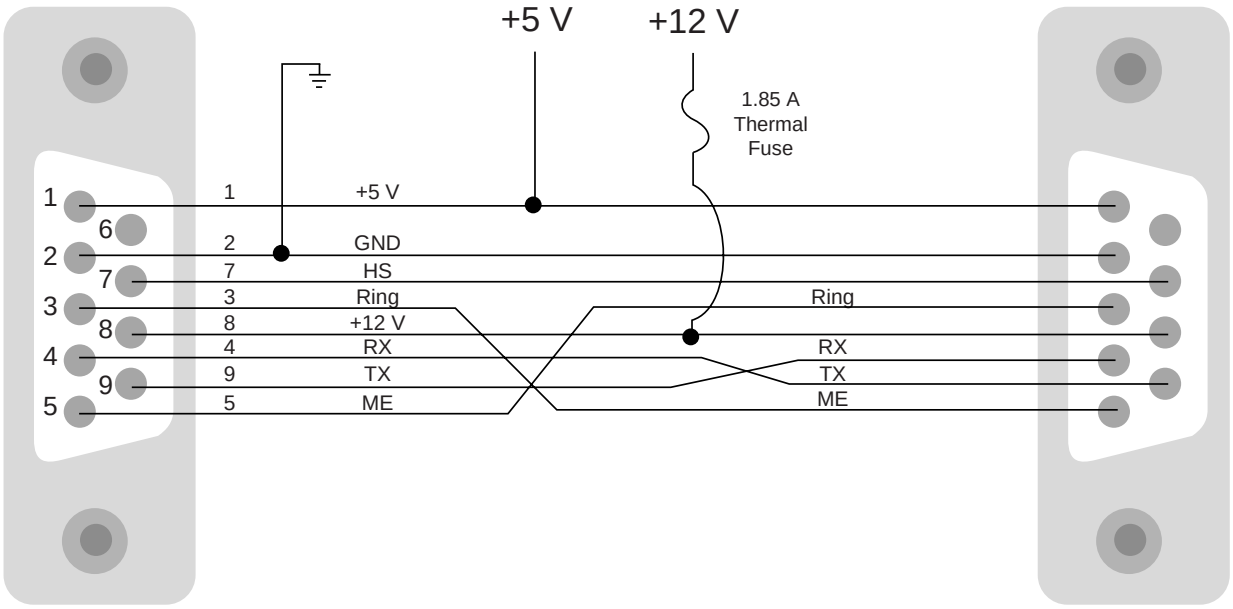

FIGURE 3. Null Modem Connections