

## *Battery Charge Management System for Solar Telecom Applications*

### **PRODUCT OVERVIEW**

Maximum Power Point Tracking, referred to as MPPT, is an electronic system that operates the Photovoltaic (PV) modules in a manner that allows the modules to produce all the power they are capable of. MPPT is a fully electronic system that varies the electrical operating point of the modules so that the modules are able to deliver maximum available power.



### **Power and Control in a Single Device**

The T80 integrates Maximum Power Point Tracking, battery charge management, state of charge information and communications into a single device.

### **Continuous Power Rating Up to 45°C Ambient**

The T80 produces full-rated power without de-rating at up to 45°C ambient temperature. Above that, the output current is reduced gradually to protect the life of the T80 and then automatically ramped up as the temperature decreases. High efficiency power circuits and robust thermal design minimize heat generation.

### **Energy Monitor Built In**

The T80 includes a built-in Energy Monitor which tracks power production and consumption to calculate the energy remaining in the battery. State of Charge (SOC) is displayed in Percent Full, Amp-hours, Watt-Hours, and Bar-Graph format.

### **Enhanced Battery Performance and Life**

The T80 supports Flooded Lead Acid (FLA), GEL and Absorbed Glass Mat (AGM) batteries. Four-stage charging with adjustable set points for all parameters.

### **Optimum MPPT/Charging Efficiency Cuts Costs**

The T80 captures up to 20% more power from the photovoltaic (PV) array with patent-pending MPPT technology. The MPPT algorithm starts early and locks onto the peak power during rapidly changing insolation and temperature. The T80 cuts the cost of a PV system by reducing the number of PV panels required.

### **Integral Performance and Update Communications**

The slot for optional add-in cards provides data communication to Remote Displays, PCs and the Internet. System performance can be monitored remotely and the T80 accepts software upgrades using a PC and the Remote Display's SD Memory Card.



## SYSTEM FEATURES AND OPTIONS

- 80 Amps continuous output at up to 45°C/113°F ambient temperature
- Built-in Battery Energy Monitor
- Patent Pending MPPT Provides Best Energy Harvest Available
- Wire the PV modules in series up to 72 VDC nominal (140 Voc max)
- Parallel T80's for higher currents: Stack Up to 16 units
- Precision charging of 12/24/36/48V batteries with one-minute set-up and Fail-safe calculated defaults
- Wired/Wireless Remote Displays

INVERTER PARAMETERS		INFORMATION
MAXIMUM OUTPUT CURRENT		80 Amps continuous at up to 45°C ambient temperature
BATTERY VOLTAGES		12, 24, 36, or 48 VDC nominal
MAX PV INPUT CURRENT		70 Amps
INPUT VOLTAGE RANGE		16 to 112 VDC operating 140VDC Maximum Open Circuit Voltage
MAX PV ARRAY POWER		5200 Watts (maximum when equalizing a 48v battery to 64v at 80 Amps)
CHARGE REGULATION MODES		Bulk, Absorption, Float, Standby, Auto Equalization, and Manual Equalization
MPPT FEATURES		Apollo Solar patent-pending MPPT algorithm harvests the optimum power under all conditions of clouds or temperature.
BATTERY TEMPERATURE COMPENSATION		6.0mV per oC per 2 volt cell
DC TO DC CONVERSION CAPABILITY		Charge 48v batteries from 4, 5 or 6* PV modules (nominal 17 Vmp) in series Charge 36v batteries from 3, 4, 5 or 6* modules in series Charge 24v batteries from 2, 3, 4, 5 or 6* modules in series Charge 12v batteries from 1, 2, 3, 4, 5, or 6* modules in series *Check max Voc from PV modules at low temperatures.
DISPLAY		Built-in 4-line 20-character LCD with back light
STATUS REPORTING		LCD status screen displays Input voltage and current, Output voltage and current, Charge-mode, and Battery State-Of-Charge (SOC).
DATA LOGGING		Logs energy harvested for 90 days. LCD displays Watt-hours, kW-hours, Amp hours, and hours each day that Float mode is active.
ENERGY MONITOR		LCD shows SOC (State-of-Charge) in a fuel gauge style bar graph as well as % Full, Amp-hours, Watt-hrs and present charge or discharge current. A 50mV/500Amp shunt is required to use the Energy Monitor features.
AUXILIARY RELAYS		Two independent relays with form A (SPST) contacts for control of external devices. Configurable as NO or NC. Contact rating ½ Amp, 50 VDC.
OPERATING TEMPERATURE		Full power output to +45°C ambient Output current automatically ramped and de-rating down above 45°C and softly restored as temperature decreases.
STANDBY POWER		Less than 2 Watts
DATA COMMUNICATION OPTIONS		Card slot for optional Network and Wireless link to Remote Display.
UNIT DIMENSIONS		38.7cm X 21.6cm X 11.1cm (15.2" X 8.5" X 4.4") Length X Width X Depth
SHIPPING DIMENSIONS		53cm X 31.8cm X 21.6cm (21" X 12 ½" X 8 ½")
WEIGHT		Unit: 7.3 kg/16 lbs Shipping weight: 10 kg/22 lbs
CERTIFICATION		UL1741, CSA C22.2 No. 107.1
ENVIRONMENTAL RATING		Indoor Type 1 (Not intended for use in extremely damp locations)
INCLUDED ACCESSORY KIT		Shunt Board and cable, battery monitor cable, and Battery Temperature Sensor (as shown in photo)

**THIS PRODUCT IS OFFERED UNDER A TECHNICAL COLLABORATION BETWEEN OPTIMAL POWER SOLUTIONS AUSTRALIA (OPS) AND APOLLO SOLAR INC. USA.**