APOLLO SOLAR
MORE POWER TO YOU

T80 TURBOCHARGER™

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

80 AMP MPPT BATTERY CHARGE MANAGEMENT SYSTEM

Power and Control in a Single Device

The T80 *TurboCharger*™ integrates Maximum Power Point Tracking, battery charge management, state of charge information and communications into a single device. With 80 Amps continuous output, the T80 has the largest capacity in the industry by over 30%.

Continuous Power Rating Up to 45°C/113°F Ambient

The T80 *TurboCharger*™ 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. The internal temperature-controlled variable speed fan runs just fast enough to maintain optimum reliability.

Energy Monitor Built In

The T80 includes a built-in Energy Monitor using TriMetric™ Technology from Bogart Engineering. The monitor 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. In addition, 90 days of energy-harvest history is stored in the T80.

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 35% more power from the photovoltaic (PV) array with patent-pending MPPT technology. The Apollo MPPT algorithm starts early and locks onto the peak power during rapidly changing insolation and temperature. The T80 dramatically cuts the cost of a PV system by reducing the number of PV panels required, eliminating the need for heavy gauge wiring, and increasing the life of the storage batteries.

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.

T80 TurboCharger™ SPECIFICATIONS

Maximum output current …….....	80 Amps continuous at up to 45°C/113°F 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 °C 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 …….. and de-rating	Full power output to +45°C ambient Output current automatically ramped down above 45°C and softly restored as temperature decreases.
Standby Power ……..	Less than 2 Watts
Data Communication Options ……	Card slot for optional Apollo Network and Wireless link to Remote Display.
Connectors ……	Power lugs accept 14 to 1/0. No. 2 wire recommended.
Conduit knockouts ……..…	One 1" or 1-¼" and one ½" or ¾" on left side. Two ½" or ¾" on back. Two 1" or 1-¼" on bottom. Bottom holes line up with power connectors.
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 ……	Apollo Shunt Board and cable, battery monitor cable, and Battery Temperature Sensor (as shown in photo)

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