



APOLLO SOLAR

T80 TURBOCHARGER™

80 AMP MPPT BATTERY CHARGE MANAGEMENT SYSTEM



- Proprietary Maximum Power Point Tracking (MPPT) Patent Pending
- Up to 5300 watts of PV power
- 80 Amps continuous output at up to 40° C ambient temperatures
- Wire PV modules in series up to 72 VDC nominal (140 Voc max)
- Charge 12, 24, 36 or 48 V batteries
- Built-in Battery Energy Monitor using TriMetric™ Technology
TriMetric is a trademark of Bogart Engineering, Inc.
- Optional Wireless Remote Readout

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 will process up to 5300 Watts of PV power - the largest capacity in the industry by over 30%.

Optimum MPPT and Charging Efficiency

The T80 captures up to 35% more power from the photovoltaic (PV) array. Our Patent Pending MPPT algorithm starts early and locks onto the peak power during rapidly changing insolation and temperature.

Energy Monitor Built In

The T80 includes a built-in Energy Monitor using TriMetric™ Technology from Bogart Engineering. It tracks power production and consumption and calculates the energy remaining in the battery. State of Charge (SOC) is displayed in Percent Full, Amp-hours and bar graph format. Historical data on energy harvest are stored in the T80 for ninety days.

Continuous Rating to 40° C

The T80 TurboCharger™ produces full rated power without de-rating up to 40°C ambient temperature. 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.

Enhance Battery Performance and Life

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

Unequaled Communications

The on-board RS-232 and slot for optional add-in cards provide data communication to Remote Readouts, PCs and the Internet. System performance can be monitored remotely and the T80 accepts software upgrades from a PC.

Reduce System Costs

Our efficient MPPT technology dramatically reduces 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.

T80 TurboCharger™ SPECIFICATIONS

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|-------------------------------------|---|
| Maximum output current | 80 Amps continuous up to 40°C (104°F) |
| 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 | 5300 Watts |
| Charge regulation modes | Bulk, Absorption, Float, Standby, Auto and Manual Equalize |
| 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 (17v nominal) 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. |
| Data logging | Logs energy harvested for 90 days. LCD display Watt-hours, kW-hours, Amp hours and hours each day that Float mode was active. |
| Energy Monitor | LCD shows SOC (State of Charge) in a fuel gauge style bar graph as well as % Full, Amp-hours 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 are available for control of external devices. Contact rating ½ Amp, 50 VDC. |
| Operating temperature range | -40°C (-40°F) to +55°C (131°F) ambient |
| Temperature de-rating | Full power output to +40°C ambient. Current automatically limited above 40°C to protect the device. Full current restored when temperature drops. |
| Data Communication Options | RS-232 included. Card slot for optional Wireless link to Remote Readout. |
| 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 |
| Environmental rating | Indoor Type 1 (Not intended for use in extremely damp locations) |

