

**MANUAL****Model: PT 36-5**

Solar Converters Inc. - Rev. D

**1.0 Specification**

Input Voltage: 0 - 80 DC volts PV Array, approx. 45 V nominal operating  
Current: 0 - 5 DC amps nominal,

Output Voltage: factory set 42.0V  
Current: 5 amps continuous, (provided sufficient solar power)

Connection: Power: #16 AWG Flying Leads

Red: PV +  
Black: PV -  
White: Bat +  
Blue: Bat -

Nominal Maximum power point tracking to optimize output power.

No User load overvoltage, regulates output voltage to "float" voltage even with no battery connected.

Efficiency: >94% over 20% charging load.

No need for external blocking diode.

Transient protected - input and output

Temperature range: -40C to +60C

**2.0 Power Connections**

**Warning:** This unit operates from multiple **Hazardous** energy sources. Ensure that all power sources are inactive before making any connections to this unit. Ensure proper procedures and the appropriate electrical codes are followed. To be serviced and operated only by qualified personnel.

**2.1 Input Power Connection****Do This First**

Input Voltage: 0 - 80 V DC  
Input Current: 5 A DC max. nominal

Using a wire of sufficient amperage for the input power (min. #14 AWG) connect the positive of the solar panel (through a strain relief clamp) to the PV + flying lead (RED) of the solar regulator. Connect the negative of the solar panel to the PV- terminal of the solar regulator to the PV- lead (BLACK).

**2.2 Battery Connection**

Output Voltage: 42 V DC  
Output Current: 0 - 5 amps

**Warning:** Ensure the battery is disconnected and/or safe operating procedures are followed when making battery connections. Extreme care must be taken to ensure the battery is not shorted. BE SAFE. Make sure all strands are inside their respective terminals. The battery must be fused. Qualified personnel only to connect and operate this unit.

Using wire of sufficient amperage for the load connection #16 AWG or better (preferred for regulation) connect the positive of the battery (through a strain relief) to the positive battery wire (WHITE) connection of the solar regulator. Similarly connect the negative of the battery to the negative battery wire (BLUE) of the solar regulator.

### **3.0 Adjustments**

This unit has internal adjustment pots to adjust the nominal MPPT of the panel as well as the output voltage.

#### **Panel Adjustment**

The Pot closest to the flying leads adjust the panel voltage.

This Pot is best adjusted by watching the output current into a discharged battery or low value resistor (1 ohm) and adjusting this pot to maximize the output current. It is set at the factory to be 46V . The unit will maintain the solar panel to the voltage set by this pot if the load current (scaled by the voltage differential) is higher than the solar panel output, thus putting maximum current into the battery from the solar panel.

NOTE: If the solar panel output voltage is below this set voltage, the unit will not turn on.

#### **Battery Voltage Adjustment**

This pot is located farthest from the flying leads. This Pot adjust the float voltage of the battery. It can be adjusted to charge a 12 , 18 or 24 V or 36 V battery or odd values which may correspond to NI-CAD batteries.

With no battery connected to the output, a solar panel connected to the input and a voltmeter on the output, adjust the pot to the voltage that the battery will be floated to. This unit was adjusted at the factory for 42 V (36 V nominal battery).

### **4.0 Indicator Lights**

This unit has LED indicators to signal the that 1) the unit is charging, and 2) The battery is full.

#### **CHRG LED:**

This LED lights whenever the unit is charging or maintaining at float value the battery voltage.

#### **FULL LED:**

This LED will light when the battery has reached its float voltage setting and is FULL. The unit will not charge the battery to a higher voltage. If a higher charge voltage is required, the units Float adjustment POT may be used. See adjustments.

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## WARRANTY

The product is warranted to be free from defects in material and workmanship for a period of one (1) year from the date of purchase by a retail customer. The purchase date must be evidenced by a valid and original sales receipt. In lieu of sales receipt, factory will use code date on its label. Removal of the Solar Converters Inc. label or serial number will void the warranty.

Product liability, except where mandated by law, is limited to repair or replacement at the manufacturer's discretion. No specific claim of merchantability or use shall be assumed or implied beyond what is printed on the manufacturers printed literature. No liability shall exist from circumstances arising from the inability to use the product, or its inappropriateness for any specific purpose or actual use, or consequences thereof for any purpose. **It is the user's responsibility to determine the suitability of the product for any particular use.** Solar Converters Inc. shall not be liable for any damages or any kind including without limitation, special, incidental or consequential obligations and liabilities of Solar Converters Inc. and the remedies of Buyer set forth herein shall be Solar Converters Inc. sole and exclusive liability.

Failure to provide a safe and correct installation, safe operation, or care for the product will void the warranty. Personal safety, and compatibility with any other equipment is the ultimate responsibility of the end user. Any returned product that shows significant evidence of abuse may not be covered by this warranty. Installation must be performed by a person with qualification to insure safe and effective operation and the installation thereof certifies that the installer has the technical qualifications to do so.

Solar Converters Inc. cannot guarantee the compatibility of its products with other components used in conjunction with Solar Converters Inc. products, including, but not limited to, solar modules, batteries, and system interconnects, and such loads as inverters, transmitters and other loads which produce "noise" or electromagnetic interference, in excess of the levels to which Solar Converters Inc. products are compatible. Solar Converters Inc. shall not assume responsibility for any damages to any system components used in conjunction with Solar Converters Inc. products nor for claims for personal injury or property damage resulting from the use of Solar Converters Inc. products or the improper operation thereof or consequential damages arising from the products or use of the products.

The warranties set forth herein are Solar Converters Inc. sole and exclusive warranties for or relating to the goods. Seller neither makes nor assumes any warranty or merchantability, any warranty fitness for any particular purpose, or any other warranty of any kind, express, implied or statutory. Solar Converters Inc. neither assumes nor authorizes any person or entity to assume for it any other liability or obligation in connection with the sale or use of the goods, and there are no oral agreements or warranties collateral to or affecting the sale of the goods.

### WARRANTY CLAIM PROCEDURE

In the event of product failure, follow this warranty claim procedure.

1. Make sure the problem you are having is actually due to the suspected product and not some other part of the system. You may call technical support for advanced troubleshooting assistance.
2. If you determine that a Solar Converters Inc. product is actually defective, describe on paper, in detail the exact nature of the failure.
3. The product must be accompanied by proof of the date of purchase satisfactory to Solar Converters Inc.
4. Return the product and description to the business office address, along with your address and a daytime phone number. Purchasers must prepay all delivery costs or shipping charges as well as any other charges encountered, in shipping any defective Solar Converters Inc. product under this warranty policy. **No shipment will be accepted Freight Collect.**
5. Any return shipment from Solar Converters Inc. will be via Canada Post. Foreign shipments will ship best way. Special shipping arrangements are available at the customer's expense.