

MANUAL**Model: PPT 12/24-15**

Solar Converters Inc. - Rev. D

Warning: Before connecting power cable to this unit, evaluate the PV and load voltage and set the unit's voltage select jumpers accordingly. See signal connections for proper wiring of voltage select termination.

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.

QUICK START:

While it is recommended that the manual be read in detail before operating this unit, for the experienced and qualified technician, this section describes a quick system setup.

Power Connections: PV - to BLACK #12 AWG Flying Lead
 Pump + to WHITE #12 AWG Flying Lead
 Pump - to BLUE #12 AWG Flying Lead

Signal Connections: 1) Float Switch
 Connect yellow #22 AWG wire to float switch, connect such that the yellow wire connect to PV- when unit is to shut off.
 2) Operating Voltage selection
 If 12 V operation, DO NOT connect purple wire to anything
 If 24 V operation, connect purple and orange #22 AWG wire to PV- if 24 V panel and 12 V motor, connect purple wire only to PV-
 3) The small #22 AWG red(+) and black(-) wires connect to an internal shunt calibrated at 50 MV = 10 amps.

Connect Last

Ensure Pump is clear and safe to operate.

Power Connection: PV + to RED #12 AWG Flying Lead

1.0 Specifications

Note: This LCB type pump driver with MPPT has integral voltage control to limit the output voltage to a max. of 15.0 V (12 V setting) or 30 V (24 V setting). This allows the unit to be overpowered for light sun conditions but not burn out the motor on good sun condition.

Introduction

This unit is a dual function 12/24 V unit selected by the simple act of connecting its purple/orange adjustment leads to PV-.

Connection: Power: max. AWG # 12 Flying Lead
 Signal: max. AWG # 22 Flying Lead
 Nominal maximum power point tracking to optimize output power.

Efficiency: >95% over 20% load

Transient protected - input and output
 Temperature range: -40 C to +60 C

Start Current: 40 Amps for 10 seconds

Fused @ 25 amps replaceable automotive fuse

Float switch: On/off function is accomplished by connecting the yellow signal wires to PV- with a float switch connection.

1.1 12 V Setting

Input Voltage: 0 - 24 DC volts 12 V Nominal PV Array, approx. 15 V nominal operating
Current: 0 - 12 DC amps nominal

Controlled Max. Output Voltage function of load and sun limited to 15.0 V
Current: 15 amps continuous, (provided sufficient solar power), 20 - 25 amps with heatsink attached

1.2 24 V Setting

Input Voltage: 0 - 48 DC volts, 24 V nominal PV Array, approx. 30 V nominal operating
Current: 0 - 12 DC amps nominal

Output Voltage: Max. Output Voltage function of load and sun limited to 15.0 / 30.0 V
Current: 15 amps continuous, (provided sufficient solar power), 20 - 25 amps with heatsink attached

2.0 Power Connections

2.1 Ground

It may be beneficial to connect the case of the device to ground reference to optimize its transient protection and minimize any potential interference with other equipment. Note the case is not connected to any of the unit's connections.

2.2 Pump Connection

Using wire of sufficient amperage for the PUMP load connection #14 AWG or better connect the positive of the PUMP to the WHITE Power Lead. Similarly connect the negative of the PUMP to the BLUE.

2.3 Input Power Connection

Using a wire of sufficient amperage for the input power (min. #14 AWG) connect the negative of the solar panel to the BLACK terminal. Connect the positive of the solar panel (do this as the last connection) to the RED Power Lead.

3.0 Signal Connections

3.1 Operating Voltage

This pump driver is a dual 12/24 pump driver.

- 1) To operate at 12 V: DO NOT connect the purple or orange signal leads to anything
- 2) To operate at 24 V panel and 24 V motor: connect the purple and orange leads to PV-
- 3) To operate at 24 V and 12 V motor: Connect the purple wire only to PV-

3.2 Float Switch Operation

To turn the unit off, connect the yellow lead to a float switch such that the yellow wire is connected to PV- when it is desired to turn off the unit.

3.3 Current Sense Output

The small #22 AWG red (+) and black (-) wires connect to an internal shunt calibrated at 50 MV = 10 amps. The output current can be measured by direct connection to a DVM set to its mv scale. Divide the number in mv read by 5 to obtain the output current in amps.

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.