

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

Solar Converters Inc. - Rev. F

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) Panel Operating Voltage selection
If 12 V operation, DO NOT connect purple wires to anything
if 24 V operation (**72 Cell Panel**), connect purple #22 AWG wire to PV- (see section 3.1)
if 24 V operation (**60 Cell Panel**), connect brown #22 AWG wire to PV- (see section 3.1)
 - 3) Pump Voltage selection
if 12 V pump, do not connect small orange wire to anything
if 24 V pump, connect orange # 22 AWG wire to PV-
 - 4) 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 (12V setting) or 30 V (24V setting). This allows the unit to be overpowered for light sun conditions but not burn out the motor in 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-.

- Power Connection
 - AWG # 12 Flying Lead
- Signal Connection
 - 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: See Section 3.1

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)

1.2 24 V Setting: See Section 3.1

Input Voltage: 0 - 50 DC volts PV Array, approx. 30V nominal operating (72 Cell), 27V nominal operating (60 Cell)
Current: 0 - 12 DC amps nominal

Output Voltage: Max. Output Voltage function of load and sun limited to 30.0 V
Current: 15 amps continuous, (provided sufficient solar power)

1.3 24 V panel to 12 V motor setting: See Section 3.1

Input Voltage: 0 - 50 DC volts PV Array, approx. 30V nominal operating (72 Cell), 27V nominal operating (60 Cell)
Current: 0 - 12 DC amps nominal

Output Voltage: N/A function of load and solar panel, voltage limited to 15 V.
Current: 0 - 10 amps continuous, surge to 15 amps

Connection: Power: max. AWG # 16 Flying Lead
Signal: max. AWG # 24 Flying Lead

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 power lead.

2.3 Input Power Connection

Using a wire of sufficient amperage for the input power connection, #14 AWG or better, connect the negative of the solar panel to the BLACK power lead. 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 volt pump driver. It is also capable of running from 72 cell 24V panels with approximately 36V nominal maximum power voltage rating, or 60 cell 24V panels with approximately 30V nominal maximum power voltage rating.

Note: 60 cell panels running a 24V pump will output approximately 25-27 volts depending on available power.

- 1) To operate at 12V: **DO NOT** connect the purple, brown or orange signal leads to PV-.
- 2) To operate at 24V (72 cell panel) : connect the purple and orange signal leads to PV-.
- 3) To operate at 24V (60 cell panel) : connect the purple and orange signal leads to PV-.
- 4) To operate 12 V motor from 24 V panels, connect purple (72 Cell panel) or brown (60 cell panel) signal lead to PV-, but not the orange.

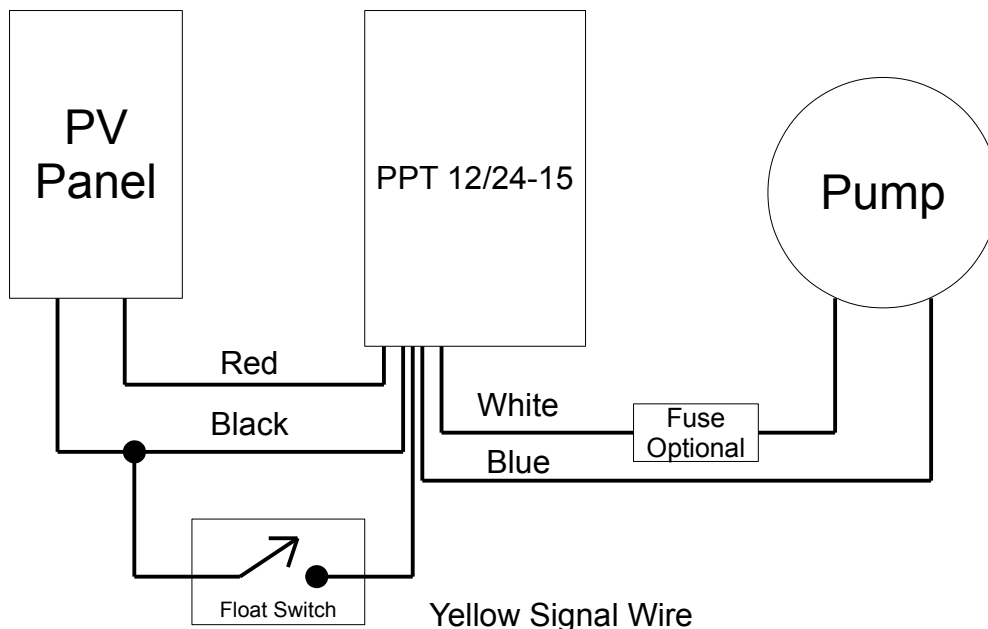
3.2 Float Switch Operation

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.

Basic hook up diagram. See section 3.1 for signal wire connections.



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.

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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.