

# Installation and Operation Guide for PD4000 Series Power Control Center

## ***LIMITED WARRANTY***

- I. **LIMITED WARRANTY:** Progressive Dynamics, Inc. warrants its power control center to be free from defects in material or workmanship under normal use and service; and limits the remedies to repair or replacement.
- II. **DURATION:** This warranty shall extend for a period of two years from the original date of purchase, and is valid only within the continental limits of the United States and Canada.
- III. **WARRANTY EXCLUSIONS:** This warranty specifically does not apply to:
  - A. Any product which has been repaired or altered in any way by an unauthorized person or service station;
  - B. Damage caused by excessive input voltage, misuse, negligence or accident; or an external force;
  - C. Any product which has been connected, installed or adjusted or used other than in accordance with the instructions furnished, or has had the serial number altered, defaced or removed;
  - D. Cost of all services performed in removing and re-installing the power converter; and
  - E. **ANY LOST PROFITS, LOST SAVINGS, LOSS OF USE OF ENJOYMENT OR OTHER INCIDENTAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, THE PRODUCT. THIS INCLUDES DAMAGES TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- IV. **PROOF OF PURCHASE:** A warranty claim must be accompanied by proof of the date of purchase.
- V. **CLAIM PROCEDURE:** Upon discovery of any defect, Progressive Dynamics, Inc. shall be supplied the following information at the address listed in this manual:
  - A. Name and address of the claimant;
  - B. Name, model and serial number of the product;
  - C. Application in which product was installed. (Includes manufacturer, model and model year where applicable)
  - D. Date of purchase; and
  - E. Complete description of the claimed defect.

Upon determination that a warranty claim exists (a defect in material or workmanship occurring under normal use and service,) the converter section shall be shipped postage prepaid to Progressive Dynamics, Inc. together with proof of purchase. The product will be repaired or replaced and returned postage prepaid.

Extended warranties are  
available for purchase at  
[www.progressivedyn.com](http://www.progressivedyn.com)

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# INSTALLATION INSTRUCTIONS

## **MOUNTING:**

- The PD4000 series POWER CONTROL CENTER should be installed horizontally (converter section to the left).
- Unit is NOT ignition protected.
- Do not mount in the LP gas or the battery compartment.
- The INTELI-POWER converters are not designed for zero clearance compartments.
- The POWER CONTROL CENTER is not designed for wet or damp locations. Install in an interior / dry location.
- Cut mounting hole to approximately 10-3/4" wide x 7-1/4" high.
- The OEM should test the POWER CONTROL CENTER converter under full load conditions in its intended mounting location to ensure proper ventilation. Failure to provide adequate ventilation will prevent the converter from supplying full output power.

## **AC ELECTRICAL:**

- Connect wiring system using proper connections and appropriately sized cable clamp.
- Connect CONVERTER AC HOT (black) wire to a 15A circuit breaker.
  - Approved breakers (main and branch):
    - Thomas & Betts – TB & TBBD series
    - Square D – HOM & HOMT series
    - Cutler Hammer/Bryant – BR & BRD series
    - GE – HACR series
- A closure plug kit for any unused Romex connectors may be purchased from Progressive Dynamics, Inc. Part Number PD812374.

- Approved Filler Plates
- ITE/Siemens – QF3
  - GE – TQLFP1

### **Torque Data**

AC Breakers: see breaker mfg data  
 AC NEU & GND bars: #8 AWG – 30 IN LBS  
 #10-14 AWG – 25 IN LBS

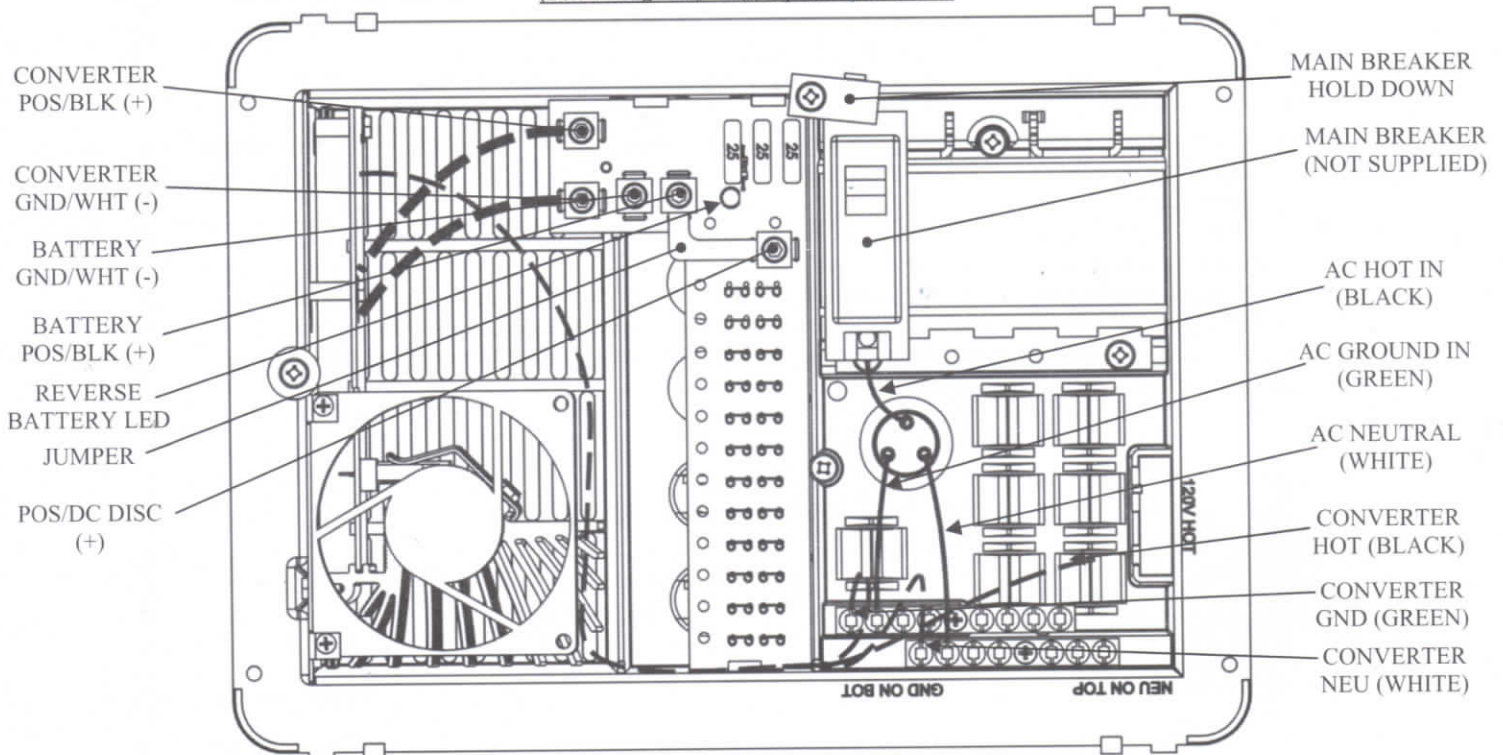
DC Lugs: 30 – 50 IN LBS

## **DC ELECTRICAL:**

- For installations without an external DC disconnect switch:
  1. Connect battery POS (+) lead to the BATTERY POS/BLK (+) lug.
  2. Connect battery NEG (-) lead to the BATTERY GND/WHT (-) lug.
  3. The POS/DC DISC. (+) lug is not used.
- For installations incorporating an external DC disconnect switch:
  1. Connect battery POS (+) lead and the BATTERY POS/BLK (+) lead to the same pole on the external disconnect switch.
  2. Remove the JUMPER.
  3. Connect the POS/DC DISC (+) lead to other pole on the external disconnect switch.
  4. Connect battery NEG (-) lead to the BATTERY GND/WHT (-) lug.

## Wiring Diagram

(Below image may vary, depending on model)



Consult a licensed electrician or RV technician for installation assistance

## GENERAL OPERATION

The INTELI-POWER series converter will supply "clean" power from input voltages that range from 105 - 130VAC.

The INTELI-POWER series of converters are primarily designed for use with a battery, however, the output of the INTELI-POWER converters are a regulated, filtered DC voltage that can power sensitive electronics without the need for a battery or other filtering.

At normal input voltages (105 – 130VAC) the full load rated capacity is available. At input voltages less than 105 VAC the converter may not supply full rated output capacity.

**PD4045/60L** - The full rated load is available for load, battery charging or both. When functioning as a regulated battery charger the converter has a nominal voltage output of 14.6 VDC. The system is designed to sense voltage on the battery and will taper the charging current as the battery becomes charged.

### CAUTION

The 4000L series converter/chargers are designed to recharge lithium iron phosphate (LiFePO4) batteries only.

**DO NOT USE TO RECHARGE LEAD/ACID BATTERIES!**

**PD4045/60** - The full rated load is available for load, battery charging or both. When functioning as a regulated battery charger the converter has a nominal voltage output of 13.6 VDC. The system is designed to sense voltage on the battery and automatically selects one of three operating modes (normal, boost and storage) to provide the correct charge level to the batteries.

**BOOST MODE:** If the converter senses that the battery voltage has dropped below a preset level the output voltage is increased to approximately 14.4 VDC to rapidly recharge the battery.

**NORMAL MODE:** Output voltage set at approximately 13.6 VDC.

**STORAGE MODE:** When there has been no significant battery usage for 30 hours the output voltage is reduced to 13.2 VDC for minimal water usage. When in storage mode, the output voltage will periodically increase to 14.4 VDC to help prevent sulfation of the battery plates.

### CAUTION

IT IS IMPORTANT THAT THE FLUID LEVEL OF ANY CONNECTED BATTERIES BE CHECKED ON A REGULAR BASIS. ALL BATTERIES WILL "GAS" AND LOSE SOME FLUIDS WHEN CONTINUOUSLY CONNECTED TO ANY CHARGING SOURCE

See website for detailed explanation of Charge Wizard® function

### **REVERSE BATTERY PROTECTION CIRCUIT**

If a battery is accidentally hooked up backwards, the converter will be protected. Easily accessible ATC type fuses will blow when a battery is connected in reverse. Correct battery wiring and replace fuses with same type and rating. The LED will glow if the fuses blow.

Amp/Model	# of fuses	Fuse size (A)
45	2	30
60	3	25

**NOTE: Disconnect all power to the converter prior to checking or changing fuses!**

### **The DC Section:**

The DC panel features 12 fused positions rated for up to 30 amps for accessories.

### CAUTION

FOR CONTINUED PROTECTION AGAINST RISK OF FIRE OR ELECTRICAL SHOCK, REPLACE ONLY WITH SAME TYPE AND RATING FUSE.

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<b>Specifications</b> (Specifications subject to change without notice)		
<b>Model</b>	PD4045(LI)	PD4060(LI)
<b>AC Section</b>	120 VAC 30 Amps Maximum** - 7 Branch Circuits Max *	
<b>DC Section</b>	12 VDC 60A Max. - 12 Branch Circuits	12 VDC 75A Max - 12 Branch Circuits
<b>Converter Section</b>	Input: 105-130VAC 50/60 Hz 725 Watts Output: 13.6 VDC (14.6 VDC) 45 Amps Weight: 5.70 lbs	Input: 105-130VAC 50/60 Hz 1000 Watts Output: 13.6 VDC (14.6 VDC) 60 Amps Weight: 6.35 lbs

\* Consult local regulatory authority for possible branch circuit restrictions

\*\* Maximum continuous loads on main or branch circuits not to exceed 80% of the circuit breaker ratings

## **TROUBLESHOOTING GUIDE**

<u><b>PROBLEM</b></u>	<u><b>POSSIBLE CAUSES</b></u>	<u><b>ACTION</b></u>
No Output	Proper AC power not connected	Connect power supply
		Check AC distribution panel for proper operation
	Reverse battery fuses blown	Check for reverse battery connection.
		Replace fuses with same type and rating
	Short circuit	Trace circuits for possible fault
	Unit has shutdown due to overheating	Check air flow
Allow unit to cool		
Unit has shutdown due to over voltage (Converter will shut down if the input voltage exceeds 132 VAC)	Check input voltage	
	Correct input voltage	
Low Output	Compartment gets too hot	Check air flow to the converter
		Improve ventilation to the compartment
	Excessive load for converter	Reduce load requirements or install larger converter.
	Input voltage not between 105-130 VAC	Correct input supply voltage
Bad battery cell(s)	Replace battery	
Intermittent or no Output on Generator, works on Shore Power	Unit has shutdown due to over voltage.	Add another load to the generator, this may reduce the "spikes" to an acceptable level
	Some generators exhibit excessive voltage spikes on the AC power output, this may cause the over voltage protection to shut the unit down	Contact generator manufacturer for possible defect in the generator
Battery does not charge but circuits have power	Reverse battery fuses blown.	Check battery polarity. Correct if necessary. Replace fuses.
	No battery connection.	Check wiring to battery including possible inline fuse.

See website [www.progressivedyn.com](http://www.progressivedyn.com) for more trouble shooting information and return instructions.

### **NOTES:**

Consult a licensed electrician or RV technician for installation assistance