Progressive Dynamics PD4000 Series Power Control Center Installation Guide

Contents

Progressive Dynamics PD4000 Series Power Control Center

Product Usage Instructions

- **Installation:**
  - The PD4000 Series Power Control Center should be mounted horizontally with the converter section to the left. Do not install in the LP gas or battery compartment. Ensure proper ventilation for full-load conditions.
- **AC Electrical Connection:**
  - Connect the wiring system using proper connections and appropriately sized cable clamp.
  - Connect the CONVERTER AC HOT (black) wire to a 15A circuit breaker.
- **DC Electrical Connection:**
  - **Without External DC Disconnect Switch:**
    - Connect battery POS (+) lead to the BATTERY POS/BLK (+) lug.
    - Connect battery NEG (-) lead to the BATTERY GND/WHT (-) lug.
  - **With External DC Disconnect Switch:**
    - Connect battery POS (+) lead and BATTERY POS/BLK (+) lead to the same pole on the external disconnect switch.
    - Remove the JUMPER.
    - Connect the POS/DC DISC (+) lead to the other pole on the external disconnect switch.

FAQs

- **Q: Where should I install the PD4000 Series Power Control Center?**
  - **A:** The unit should be installed horizontally with the converter section to the left in an interior/dry location, avoiding wet areas.

- **Q: What should I do in case of a warranty claim?**
  - **A:** To make a warranty claim, provide proof of purchase and contact Progressive Dynamics, Inc. with the required information as outlined in the manual.

LIMITED WARRANTY

1. **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.
2. **DURATION:** This warranty shall extend for two years from the original date of purchase, and is valid only within the continental limits of the United States and Canada.
3. **WARRANTY EXCLUSIONS:** This warranty specifically does not apply to:
   - **A.** Any product that 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 that has been connected, installed 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 INSTEAD OF ALL OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
4. **PROOF OF PURCHASE:** A warranty claim must be accompanied by proof of the date of purchase.
5. **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.

INSTALLATION INSTRUCTIONS

MOUNTING:

- The PD4000 series POWER CONTROL CENTER should be installed horizontally (converter section to the left).
- The 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 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 the wiring system using proper connections and appropriately sized cable clamp.
- Connect the 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:

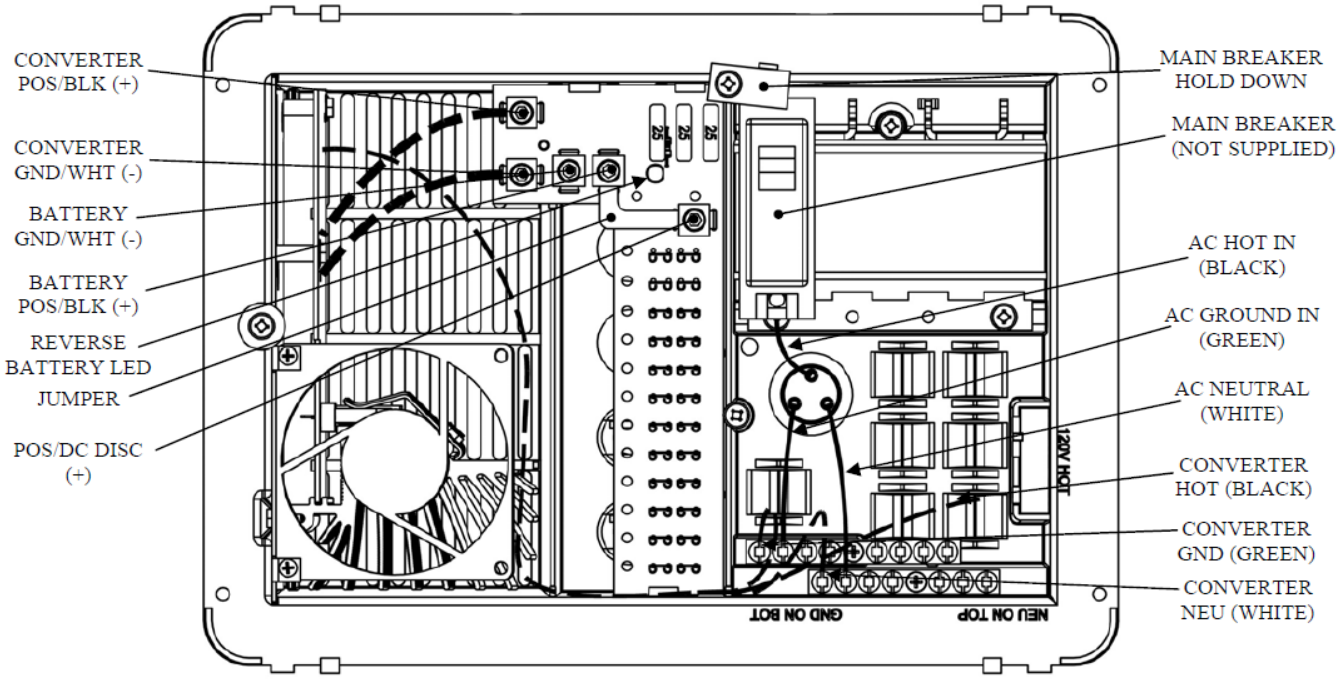
1. Connect battery POS (+) lead to the BATTERY POS/BLK (+) lug.
2. Connect battery NEG (-) lead to the BATTERY GND/WHT (-) lug.
3. The POS/DC DISC. (+) lug is not used.

For installations incorporating an external DC disconnect switch:

1. Connect the 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 the other pole on the external disconnect switch.
4. Connect battery NEG (-) lead to the BATTERY GND/WHT (-) lug.

Wiring Diagram

(The below image may vary, depending on the model)

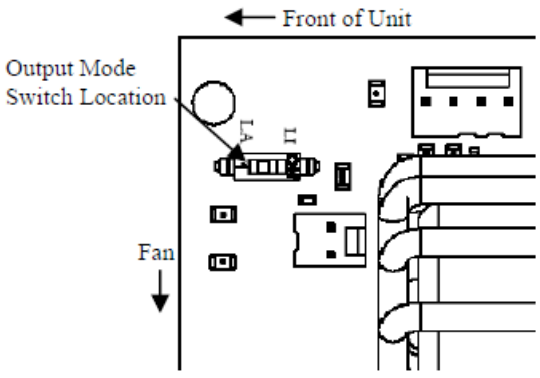


Consult a licensed electrician or RV technician for installation assistance

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 is 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.
- The optional OUTPUT MODE SWITCH sets the converter output to either a constant 14.6VDC with the Charge Wizard® disabled (switch in ‘LI’ position) or a nominal 13.6VDC with full Charge Wizard® function (switch in ‘LA’ position).
- ‘LI’ mode is intended for use with lithium batteries with a BMS requiring a constant converter output. ‘LA’ mode is intended for use with lead/acid batteries where the Charge Wizard® will optimize battery charging.

NOTE: The OUTPUT MODE SWITCH should only be switched when new batteries are installed. Verify battery type before adjusting the output mode switch.



- **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.
- See the website for a detailed explanation of the Charge Wizard® function
- **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

DC SECTION FEATURES

- The REVERSE BATTERY PROTECTION CIRCUIT protects the converter in the event a battery is accidentally hooked up backward. 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 to restore proper operation.
- The DC panel features up to 12 fused positions rated for up to 30 amps, depending on the model, for accessories including ten low-to-full current rated branches. Each branch has an optional LED to indicate a blown branch fuse.
- **NOTE:** Disconnect all power to the converter before checking or changing fuses!
- **CAUTION** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE OR ELECTRICAL SHOCK, REPLACE ONLY WITH SAME TYPE AND RATING FUSE.
- Consult a licensed electrician or RV technician for installation assistance

Specifications

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

PROBLEM	POSSIBLE CAUSES	ACTION
No Output	Proper AC power is not connected	Connect power supply
		Check the AC distribution panel for proper operation
	Reverse battery fuses blown	Check for reverse battery connection.
		Replace fuses with the same type and rating
	Short circuit	Trace circuits for possible fault
	The unit has shut down due to overh eating	Check airflow
		Allow the unit to cool
	Unit has shut down due to overvoltag e (The converter will shut down if the input voltage exceeds 132 VAC)	Check input voltage
		Correct input voltage
Low Output	The compartment gets too hot	Check airflow to the converter
		Improve ventilation in the compartment
	Excessive load for converter	Reduce load requirements or install the larger conv erter
	Input voltage not between 105-130 V AC	Correct input supply voltage
	Bad battery cell(s)	Replace battery
Intermittent or no Output on Genera tor works on Shor e Power	The unit has shut down due to overv oltage.	Add another load to the generator, this may reduce the “spikes” to an acceptable level
	Some generators exhibit excessive v oltage spikes in the AC power output, which may cause over voltage protection to shut the unit do wn	Contact the generator manufacturer for possible def ects in the generator
The battery does not charge but the circuits have pow er	Reverse battery fuses blown.	Check battery polarity. Correct if necessary. Replac e fuses.
	No battery connection.	Check the wiring to the battery including possible inl ine fuse.

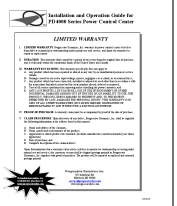
See the website **www.progressivedyn.com** for more troubleshooting information and return instructions.
NOTES: Consult a licensed electrician or RV technician for installation assistance.

CONTACT INFORMATION

- Progressive Dynamics Inc.
- 507 Industrial Rd.

- Marshall, MI 49068
- service@progressivedyn.com.
- www.progressivedyn.com.

Documents / Resources

	Progressive Dynamics PD4000 Series Power Control Center [pdf] Installation Guide PD4000 Series Power Control Center, PD4000 Series, Power Control Center, Control Center, Center

References

- User Manual