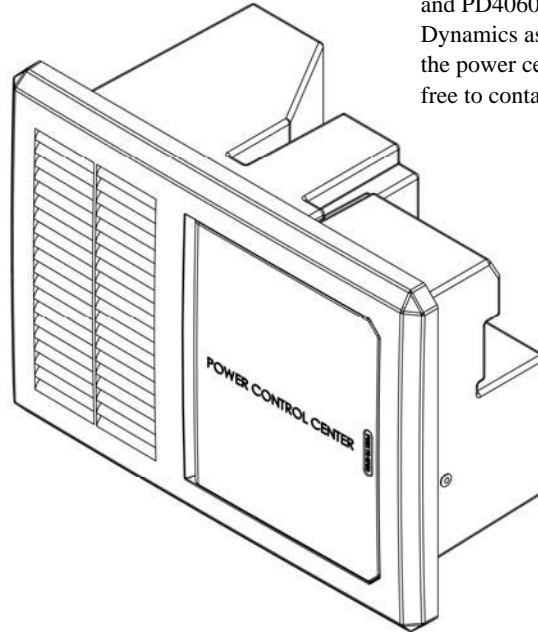




Installation and Operation Guide for PD4000 Series Power Control Center

Extended warranties
are available for purchase at
www.progressivedyn.com



As of January 1, 2016, the hot buss in our model PD4045 and PD4060 is no longer supplied by Progressive Dynamics as it is not required for the proper function of the power center. If you have any questions, please feel free to contact our Service Department at 269-781-4242.



Thank you for selecting Progressive Dynamics as your choice for your RV power needs. We'd like to welcome you to a full line of industry leading and time tested products including our newest addition to the PDI family, the PD4000 Series POWER CONTROL CENTER.

The PD4000 Series POWER CONTROL CENTER offers break-through technologies that help maintain and lengthen the life of your batteries such as our patented Charge Wizard.

The heart of the PD4000 is the INTELI-POWER Converter. The built-in Charge Wizard[®] microprocessor constantly monitors the battery voltage then automatically adjusts the converter output voltage to provide the proper charging voltage for fast recharges and long-term maintenance.

The intelligent way to charge and maintain your RV battery.

With enough AC and DC branches you'll have plenty of options for your growing RV needs.

Progressive Dynamics, Inc.

507 Industrial Rd.

Marshall, MI 49068

www.progressivedyn.com

Patent Numbers: 5,982,643 - 6,184,649 - 7,782,002

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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 and model of the product;
 - C. Name, year and model of the recreational vehicle in which the product was installed;
 - 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.

For Warranty Service Call: (269) 781-4242

Installation Instructions

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. Cut mounting hole to approximately 10 3/4" wide X 7 1/4" high.

Connect wiring system using proper connections and appropriately sized cable clamp. A closure plug kit for any unused Romex connectors may be purchased from Progressive Dynamics, Inc. Part Number PD812374.

For installations without an external DC disconnect switch connect battery POS (+) to the BATTERY POS. + lug. The ALTERNATE BATTERY POS. + lug is not used. (see wiring diagram for lug locations)

DC DISCONNECT: For installations incorporating an external DC disconnect switch, connect battery POS (+) and the BATTERY POS. + lug to the same pole on the external disconnect switch. Remove the JUMPER. Connect the ALTERNATE BATTERY POS. + to other pole on the external disconnect switch. (see wiring diagram for component locations)

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.

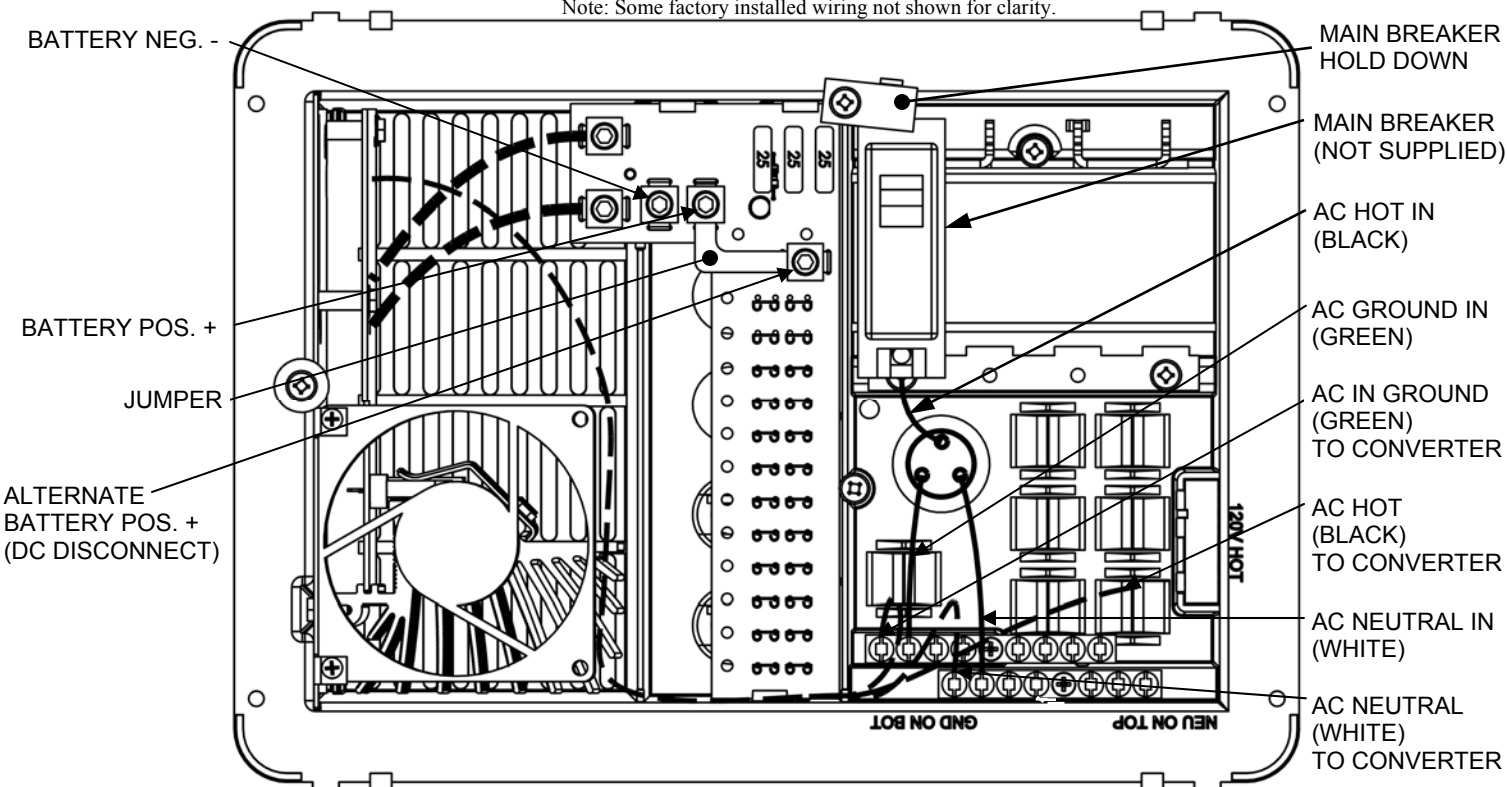
The INTELI-POWER converters are not designed for zero clearance compartments.

The POWER CONTROL CENTER is not designed for wet or damp locations. Install in an interior / dry location.

| The following breakers are suitable for MAIN and BRANCH breakers | MAIN | Branch | Filler Plate |
|--|------|--------|------------------------------|
| ITE/Siemens—QP,QT | 30A | 15A | ITE/Siemens QF3 GE TQLFPI |
| Thomas & Betts—TB & TBBD Series | | | |
| Square D—HOM, HOMT | | | |
| Cutler Hammer/Bryant—BR,BRD Series | | | |
| GE—HACR | | | |

Detailed Wiring Diagram

Note: Some factory installed wiring not shown for clarity.



Note: Above image may vary, depending on model.

Consult a licensed electrician or an RV technician for installation assistance

Many options will be installed prior to the purchase of your new RV, however there are a few options that you should be aware of while operating your new POWER CONTROL CENTER.

The PD4000 series incorporates a microprocessor to provide a three-stage charge profile to ensure rapid, yet safe recharging of 12 volt batteries. These three separate stages BOOST, NORMAL, and STORAGE modes ensure that the battery is automatically recharged and maintained with minimum maintenance (i.e. reduced need to add water).

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 volts DC to rapidly recharge the battery.

NORMAL MODE: Output voltage set at approximately 13.6 volts DC.

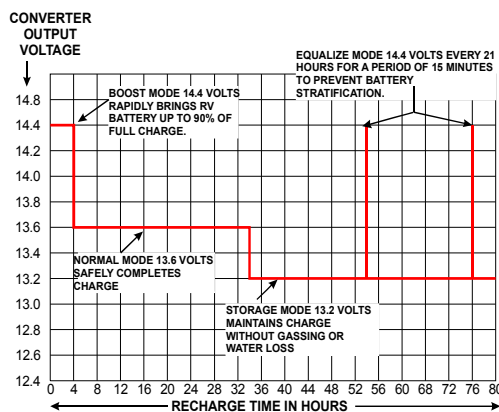
STORAGE MODE: When the converter senses that there has been no significant battery usage for 30 hours the output voltage is reduced to 13.2 volts DC for minimal water usage. When in storage mode the microprocessor automatically increases the output voltage to 14.4 volts DC for 15 minutes every 21 hours to help reduce sulfation of the battery plates.

- All times and voltages provided above are approximate. -

CAUTION

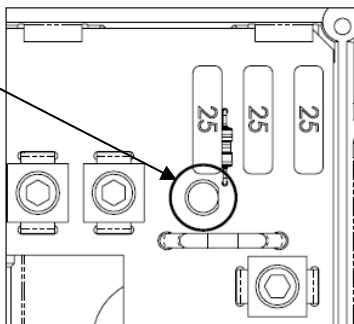
IT IS IMPORTANT THAT THE FLUID LEVEL OF ANY CONNECTED BATTERIES BE CHECKED ON A REGULAR BASIS. ALL BATTERIES WILL "GAS" AND LOSE SOME FLUID WHEN CONTINUOUSLY CONNECTED TO ANY CHARGING SOURCE.

~Does not apply to "gel-cell" batteries~



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 one of the fuses blow. Appropriate fuse size is indicated on the circuit board.



The DC Section:

The DC panel features up to 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.

AC RATING

COPPER WIRE ONLY. RATED 75 C MIN
 MAXIMUM SERVICE: 30 AMPS, 120V 50/60 HZ SINGLE PHASE
 LINE TERMINALS SIZE 6-14 AWG
 LOAD TERMINALS SIZE 6-14 AWG
 NEUTRAL AND GROUND SIZE 6 - 14 AWG
 SHORT CIRCUIT CURRENT RATING:
 SUITABLE FOR USE ON NO MORE THAN
 120 VOLTS AC, 10,000 AMPERES MAX,
 LIMITED TO THE LOWEST INTERRUPTING
 CAPACITY OF ANY BREAKER INSTALLED

MAXIMUM CONTINUOUS LOADS ON
 MAINS OR BRANCH CIRCUITS NOT TO
 EXCEED 80% OF THE CIRCUIT
 BREAKER RATINGS

NEUTRAL/GND WIRE COMBINATIONS:

- (1) #12 STRANDED & (1) #14 SOLID
- (1) #12 STRANDED & (1) #14 STRANDED
- (1) #12 SOLID & (1) #14 STRANDED
- (1) #12 SOLID & (1) #14 SOLID
- (2) #14 STRANDED OR (2) #14 SOLID
- (2) #12 STRANDED OR (2) #12 SOLID
- (2) #10 STRANDED OR (2) #10 SOLID

TORQUE DATA

LINE TERMINAL: SEE CIRCUIT BREAKER
 NEUTRAL BAR & GROUND:
 #4 - #6 35 IN. LBS
 #8 30 IN. LBS
 #10 - #14 25 IN. LBS

| Specifications (Specifications subject to change without notice) | | |
|--|--|---|
| Model | PD4045 | PD4060 |
| 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 VDC, 45 Amps Weight: 5.70 lbs | Input: 105-130 VAC 50/60 Hz 1000 Watts Output: 13.6 VDC, 60 Amps Weight: 6.35 lbs |

* Consult local regulatory authority for possible branch circuit restrictions

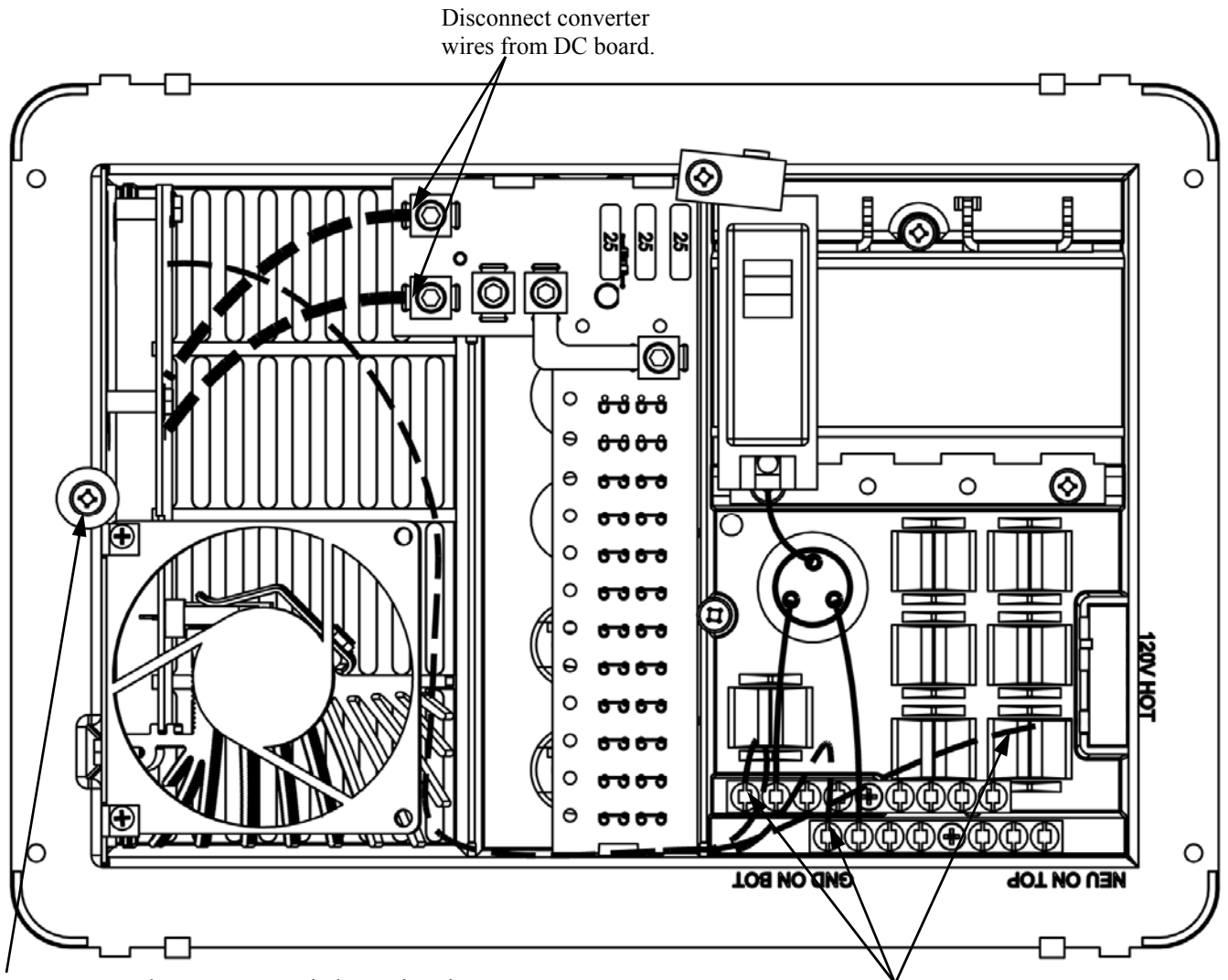
TROUBLESHOOTING GUIDE

| <u>PROBLEM</u> | <u>POSSIBLE CAUSES</u> | <u>ACTION</u> |
|--|---|---|
| No Output | 120 VAC supply not connected | Connect power supply Check AC distribution panel for proper operation |
| | Reverse battery fuses blown (See page 2 for location) | Check for reverse battery connection. Replace fuses with same type and rating (See page 2) |
| | Short circuit | Trace RV 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 |
| 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 |

Consult a licensed electrician or an RV technician for installation assistance

Do not replace the converter section unless the following checks have been performed:

1. Use an AC voltmeter to check for the proper voltage at the 120 VAC breaker that the converter is connected to. This voltage should be between 105 and 130 volts.
2. Remove the reverse battery fuses and check the converter output from the CONVERTER GND to the CONVERTER POS terminals on the DC board. This should be 13.6 VDC.
3. Check the Reverse Battery fuses . These fuses will only blow if the battery or DC output leads were connected in reverse, even for a moment. If they are blown check the polarity of the battery connections before replacing them.
4. If the Converter output is not present and there is AC to the converter , the converter is defective.



Remove screw that secures metal plate to housing.

If you should need to replace the power converter for any reason, follow these steps to safely remove the converter section.

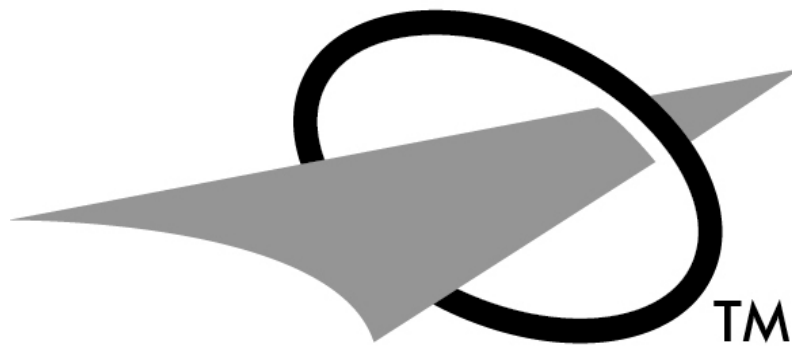
Make sure all power is disconnected before proceeding.

1. Remove the neutral, ground, and hot wires that lead to the converter on the AC side.
2. Remove the converter output wires from the DC board, ground and positive.
3. Finally unscrew the screw that holds the metal converter plate to the plastic housing.

For factory repairs, return only the converter section.

Make sure you use proper packaging to ensure the product's safe arrival.

Disconnect converter wires from breaker, NEU, and GND bar connections.



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