INTELI-POWER 9100 ®

PD9100 SERIES
OWNERS MANUAL

PROGRESSIVE DYNAMICS, INC.
POWER CONVERTER LIMITED WARRANTY

I. **LIMITED WARRANTY:** Progressive Dynamics, Inc. warrants its power converter 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 power converter 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 power converter 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 by mail, telephone or fax, at the address listed below:

A. Name and address of the claimant;

B. Name and model of the power converter;

C. Name, year and model of the recreational vehicle in which the power converter 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 power converter shall be shipped postage prepaid to Progressive Dynamics, Inc. together with proof of purchase. The power converter will be repaired or replaced and returned postage prepaid.

Progressive Dynamics Inc.
507 Industrial Rd.
Marshall, MI 49068
269.781.4241 Fax 269.781.7802

GENERAL INFORMATION

The INTELI-POWER 9100 series 120 VAC to 12 VDC power converters are state-of-the-art electronic converter / battery chargers. The INTELI-POWER 9100's are UL and CUL (Canadian) listed.

Their compact size and quiet operation gives greater flexibility in selecting the mounting location for either OEM installation or after market replacement.

All INTELI-POWER 9100 series converters incorporate the Total Charging Management System (TCMS) interface. The TCMS interface connects the converter to optional devices that can automatically control the output voltage of the converter thereby controlling the charge rate to the batteries.

The converter has been designed and tested to provide maintenance free operation. The INTELI-POWER 9100 line of power converters have undergone tens of thousands of hours of strenuous engineering testing to insure years of trouble free operation.

GENERAL OPERATION

The INTELI-POWER series will supply "clean" nominal 13.6 VDC power from input voltages that range from 90-130 VAC.

Operates With or Without a Battery Connected, the output of the INTELI-POWER 9100 converters are a regulated, filtered D.C. voltage that can power sensitive electronics without the need for a battery or other filtering.

NOTE

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

The full rated load (either 30,40,45, 55, 60 or 80 amps) is available for load, battery charging or both. When functioning as a regulated battery charger the INTELI-POWER 9100 converters have nominal voltage output of 13.6 VDC. The system was designed to sense voltage on the battery and will taper the charging current as the battery becomes charged. When the INTELI-POWER 9100 senses the battery is at full charge it will provide a trickle charge to maintain a full charge condition.

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.

When the vehicle is to be stored for extended periods of time it is recommended that the batteries be disconnected, unless one of the optional devices are attached to the TCMS interface (see the owners manual for that device for more information). Re-connect once a month to maintain a full charge.

FEATURES

INTELLIGENT ... The INTELI-POWER 9100 thinks for itself, by monitoring and sensing the load and ambient conditions.

MULTIPLE BATTERY CHARGING ... INTELI-POWER 9100 has the capability of charging multiple batteries at the same time! They can even charge a combination of different capacity batteries.

GFCI PROTECTION ... INTELI-POWER 9100 has the LOWEST ground fault leakage. With this unit, the user can confidently utilize the RV's AC outlets without being concerned about a ground fault interruption of the facilities power source.

REVERSE BATTERY PROTECTION CIRCUIT ... If a battery is accidentally hooked up backwards, the converter will be protected. The PD9130 has one 30 AMP ATC automotive style fuse. Models PD9160A, PD9155, PD9145A and PD9140A have two 30 AMP ATC automotive style fuses. Model PD9180 has three 30 AMP ATC automotive style fuses mounted externally that will blow if a reverse battery condition should occur. Note: if the unit has accessories plugged into the TCMS interface the TCMS plug must be removed to provide clearance to replace the fuses.

CAUTION

IF THE REVERSE BATTERY PROTECTION FUSES ARE BLOWN DURING INSTALLATION, CHECK TO SEE THAT THE BATTERY HAS BEEN CONNECTED PROPERLY BEFORE REPLACING THE FUSES. REPLACE THE FUSES ONLY WITH THE SAME TYPE AND RATING AS THE ORIGINAL FUSES. USING OTHER FUSES COULD RESULT IN THE CONVERTER BEING DAMAGED, VEHICLE DAMAGE, INJURY OR OTHER CONSEQUENCES (SEE WARRANTY).

SHORT CIRCUIT PROTECTION ... The "smart" converter, INTELI-POWER 9100, senses, within millionths of a second, if the output terminals have been shorted. If this condition should occur the converter first limits the current. Should the condition continue to exist the converter then reduces the current output, within thousandths of a second. The INTELI-POWER 9100 was designed to protect itself. Once the "short circuit" has been corrected the INTELI-POWER 9100 will automatically return to normal operating conditions.

THERMAL PROTECTION ... If a over temperature condition should occur due to air flow obstruction or improper installation the INTELI-POWER 9100 senses the condition and decreases power output until the unit returns to normal operating temperature. Full output capacity will return as the unit cools down.

IGNITION PROTECTION ... All INTELI-POWER 9100 series converters are ignition protected.

INTERNAL COMPONENT COOLING ... The system is so efficient that if demand is less than 20% of the rated capacity, the auxiliary cooling fan will NOT activate. This means that at night when the power demand is reduced the fan may not come on at all. The location of the fan allows for the maximum cooling of both the case and components.

OVERVOLTAGE PROTECTION ... If the Input Voltage exceeds a preset limit the converter will shut-down to prevent damage. The unit will return to normal operation when the voltage returns to normal

INSTALLATION INSTRUCTIONS

Horizontal mounting of the INTELI-POWER 9100, is recommended although it can be mounted in any position that provides unobstructed ventilation to the fan and vent holes. Secure the converter firmly to the mounting surface using standard fasteners.

The OEM should test the INTELI-POWER 9100 under full load conditions in its intended mounting location. This will insure that there is sufficient unobstructed ventilation to the converter allowing it to operate at its maximum rated load. Failure to provide adequate ventilation to the converter will cause the converter to cycle on and off as it responds to ambient conditions.

THE INTELI-POWER 9100 CONVERTERS ARE NOT DESIGNED FOR ZERO CLEARANCE COMPARTMENTS.

! ATTENTION !

USE A 5/32" HEX DRIVER TO TIGHTEN THE OUTPUT SCREWS. DO NOT EXCEED 50 IN-LB TORQUE. PD9160 AND PD9180 USE A SLOTTED SCREWDRIVER TO TIGHTEN THE OUTPUT SCREWS

THE OUTPUT TERMINALS ARE RATED FOR 2 TO 14 GA. COPPER OR ALUMINUM WIRE.

THE INTELI-POWER 9100 CONVERTERS ARE NOT WEATHER TIGHT OR DESIGNED FOR WET LOCATION MOUNTING. THEY MUST BE PROTECTED FROM DIRECT CONTACT WITH WATER.

DURING THE MANUFACTURING PROCESS AVOID THE INTRODUCTION OF FOREIGN MATERIALS INTO THE CASE AS THIS COULD CAUSE A MALFUNCTION OF THE CONVERTER.

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES	ACTION
1. No Output	120 VAC supply not connected	Connect power supply
		Check AC distribution panel for proper operation
	External Fuses Blown	Check for Reverse Polarity
		Replace Fuses with same type and rating
	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 (Also see Item 5 below)	Check input voltage
		Converter will shut down if the input voltage exceeds 132 Volts
		Correct Input Voltage
2. External Fuses Blown	Reverse Battery Hook Up	Correct Hook up and replace Fuses with same type and rating
3. Converter cycles on & off	Compartment gets too hot	Check air flow to the converter
		Improve Ventilation to the compartment
4. Low Output	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
5. 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

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

1. Loosen the screw on the positive terminal and disconnect the positive wire. Read the converter output voltage using a DC voltmeter. If the voltage is above 13 volts, the converter is working properly.
2. If the converter output is zero volts, use an AC voltmeter to check for proper voltage at the 120 VAC outlet that the converter is plugged into. This voltage should be between 105 and 130 volts.
3. Check the fuses located at the front of the converter. These fuses will only blow if the battery or DC output leads were connected in reverse, even for a moment. Replace the fuses and repeat step 1.

NOTE: When replacing fuse(s) the TCMS plug must be removed to provide clearance for fuse replacement.

INPUT/OUTPUT SPECIFICATIONS

PD9130

Input: 105-130 VAC 60 Hz
500 Watts
Output: 13.6 VDC, 30 Amps
Dimensions: 4.5H x 7L x 7.25W
Weight: 4lbs

PD9140A

Input: 105-130 VAC 60 Hz
600 Watts
Output: 13.6 VDC, 40 Amps
Dimensions: 4.5H x 8.625L x 7.25W
Weight: 4.5lbs

PD9145A

Input: 105-130 VAC 60 Hz
725 Watts
Output: 13.6 VDC, 45 Amps
Dimensions: 4.5H x 8.625L x 7.25W
Weight: 4.5lbs

PD9155

Input: 105-130 VAC 60 Hz
900 Watts
Output: 13.6 VDC, 55 Amps
Dimensions: 4.5H x 10L x 7.25W
Weight: 5.4lbs

PD9160A/PD9170A

Input: 105-130 VAC 60 Hz
1000 Watts/1250 Watts
Output: 13.6 VDC, 60/70 Amps
Dimensions: 3.6H x 9.15L x 9W
Weight: 5.8lbs

PD9180

Input: 105-130 VAC 60 Hz
1300 Watts
Output: 13.6 VDC, 80 Amps
Dimensions: 3.6H x 11.65L x 9W
Weight: 7.5lbs

CAUTION RISK OF FIRE:
Chassis bonding wire must be a separate wire ran directly to chassis from the Grounding Lug provided on the side of the converter. **DO NOT** connect Output negative to chassis using the same wire.