



**PD9100L SERIES LITHIUM BATTERY CONVERTER/CHARGER
OWNERS MANUAL**

PROGRESSIVE DYNAMICS, INC.
CONVERTER/CHARGER LIMITED WARRANTY

- I. **LIMITED WARRANTY:** Progressive Dynamics, Inc. warrants its converter/charger 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 converter/charger 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; Any converter/charger 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 converter/charger; 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 converter/charger;
 - C. Date of purchase; and
 - D. 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/charger shall be shipped postage prepaid to Progressive Dynamics, Inc. together with proof of purchase. The converter/charger will be repaired or replaced and returned postage prepaid.

Progressive Dynamics Inc.
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269.781.4241 Fax 269.781.7802

GENERAL INFORMATION

The INTELI-POWER 9100L series 120 VAC to 12 or 24 VDC converter/chargers are state-of-the-art electronic power sources for charging lithium batteries. The INTELI-POWER 9100L's are designed to meet stringent UL safety requirements.

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

The converter/charger has been designed and tested to provide maintenance free operation. The INTELI-POWER 9100L line of converter/chargers 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 14.6 VDC power for 12 volt models and 29.2 VDC power for 24 volt models from input voltages that range from 105-130 VAC.

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

NOTE

At normal input voltages the full load rated capacity is available.

At input voltages less than 105 VAC the converter/charger may not supply full rated output capacity.

The full rated load (30,40,45, 60, 70 or 80 amps at 12 VDC and 25 or 40 amps at 24 VDC) is available for load, battery charging or both. When functioning as a regulated battery charger the INTELI- POWER 9100L converter/chargers have nominal voltage output of 14.6 VDC for 12 volt models and 29.2 VDC power for 24 volt models. The system was designed to sense voltage on the battery and will taper the charging current as the battery becomes charged.

CAUTION

The 9100L series converter/chargers are designed to recharge lithium iron phosphate batteries. DO NOT USE TO RECHARGE LEAD/ACID BATTERIES!

FEATURES

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

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

REVERSE BATTERY PROTECTION CIRCUIT... If a battery is accidentally hooked up backwards, the converter will be protected. Models PD9130L and PD9125-24L have one 30A ATC automotive style fuse. Model PD9140L has two 25A ATC automotive style fuses. Models PD9145L and PD9140-24L have two 30A ATC automotive style fuses. Models PD9160L and PD9170L have three 25A ATC automotive style fuses. Model PD9180 has three 30A ATC automotive style fuses mounted externally that will blow if a reverse battery condition should occur.

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/CHARGER BEING DAMAGED, EQUIPMENT DAMAGE, INJURY OR OTHER CONSEQUENCES (SEE WARRANTY).

SHORT CIRCUIT PROTECTION... The "smart" converter/charger, INTELI-POWER 9100L, 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 9100L was designed to protect itself. Once the "short circuit" has been corrected the INTELI-POWER 9100L 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 9100L 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 9100L series converter/chargers 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. 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/charger 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 9100L, is recommended although it can be mounted in any position that provides unobstructed ventilation to the fan and vent holes. Secure the converter/charger firmly to the mounting surface using standard fasteners.

The OEM should test the INTELI-POWER 9100L under full load conditions in its intended mounting location. This will insure that there is sufficient unobstructed ventilation to the converter/charger allowing it to operate at its maximum rated load. Failure to provide adequate ventilation to the converter/charger will cause the converter/charger output voltage to be reduced as it responds to ambient conditions.

THE INTELI-POWER 9100L CONVERTER/CHARGERS 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.

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

THE INTELI-POWER 9100L CONVERTER/CHARGERS 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/CHARGER.

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 circuits for possible fault
	Unit has shutdown due to over voltage (Also see Item 3 below)	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. Intermittent or no Output	Unit has shutdown due to over voltage.	Correct overvoltage condition
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
	Too hot	Check air flow Allow unit to cool

Do not replace the converter/charger 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 14.3 volts (12 volt models) or 28.6 volts (24 volt models), the converter/charger is working properly.
2. If the converter/charger 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) an accessory plug may need to be removed to provide clearance for fuse replacement.

INPUT/OUTPUT SPECIFICATIONS

PD9130L

Input: 105-130 VAC 50/60 Hz
500 Watts
Output: 14.6 VDC, 30 Amps
Dimensions: 4.5H x 8.63L x 7.25W
Weight: 4lbs

PD9140AL

Input: 105-130 VAC 50/60 Hz
600 Watts
Output: 14.6 VDC, 40 Amps
Dimensions: 4.5H x 8.63L x 7.25W
Weight: 4.5lbs

PD9145AL

Input: 105-130 VAC 50/60 Hz
725 Watts
Output: 14.6 VDC, 45 Amps
Dimensions: 4.5H x 8.63L x 7.25W
Weight: 4.5lbs

PD9160AL

Input: 105-130 VAC 50/60 Hz
1000 Watts
Output: 14.6 VDC, 60 Amps
Dimensions: 3.6H x 9.15L x 9W
Weight: 5.8lbs

PD9170AL

Input: 105-130 VAC 50/60 Hz
1250 Watts
Output: 14.6 VDC, 70 Amps
Dimensions: 3.6H x 9.15L x 9W
Weight: 5.8lbs

PD9180L

Input: 105-130 VAC 50/60 Hz
1300 Watts
Output: 14.6 VDC, 80 Amps
Dimensions: 3.6H x 11.65L x 9W
Weight: 7.5lbs

PD9125-24L

Input: 105-130 VAC 50/60 Hz
900 Watts
Output: 29.2 VDC, 25 Amps
Dimensions: 4.5H x 8.63L x 7.25W
Weight: 7.5lbs

PD9140-24L

Input: 105-130 VAC 50/60 Hz
1300 Watts
Output: 29.2 VDC, 40 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.

