

POWER MAX



AC to DC Converter & Charger

AC to DC CONVERTER & CHARGER

PM models 32, 45, 55, 60, and 75 Amp

Installation & Maintenance



SAFETY ALERT

FOR YOUR SAFETY, READ ALL INSTRUCTIONS BEFORE INSTALLATION AND OPERATION.

INSTALLER: Provide these instructions to the end user or consumer.
CONSUMER: Keep these instructions for future reference.

NOTICE: Products are not to be used nor are warranted in aerospace, medical or lifesafety applications.



WARNING – Avoid Possible Injury or Death

120 V AC is present. This Converter/Charger is designed to convert 120 VAC to 12 VDC. It also provides low voltage power for charging on-board 12 VDC batteries. The PM series Converter/Charger is a “switch mode” type and is designed to be maintenance-free with no user serviceable components. The Converter/Charger power output is “current limiting” by design.



WARNING – Avoid Personal Injury or Product Damage

NEVER store electrical devices in compartments where flammable liquids (such as gasoline) exist.
DO NOT mount/install unit in compartments designed for storage of batteries of flammable liquids.

1. DISCONNECT DC POWER. Disconnect the battery POS (+) wire at the battery end before connecting this Converter/Charger to any wiring.
2. LOCATION. The mounting location may be on any interior (out of direct weather) surface. Location chosen must be accessible after installation. When mounted inside a cabinet, the cabinet must be large enough to allow dissipation of heated air. Make sure that there is a minimum of 1" (one inch) free air space at each end of the unit so that cooling air can move through the unit properly. AVOID foreign contaminants such as dirt, metal particles or moisture.
3. MOUNTING. Flanges with holes are provided for ease of mounting using standard fasteners. Confirm that the surface that the converter is mounted to is solid and will hold the weight (6 lbs) during vehicle operation.
4. ELECTRICAL REQUIREMENTS. A 120 VAC receptacle needs to be located within 36 inches of the converter to supply power. Electrical consideration should also be given to mounting near the locations of the batteries and the 12-volt DC distribution panel.
5. ELECTRICAL CONNECTIONS. Be sure to tighten all connections securely. A loose connection can quickly cause terminals and wires to overheat. Review unit labels for recommended terminal torque values.



WARNING – Avoid Possible Injury or Death

120 VAC Connection – First confirm that the 120 V AC power source AC circuit breaker(s) are in the ☐ off position. DO NOT turn-on AC circuit breakers until installation is complete.

- Using an 8 AWG minimum size copper wire, attach from the chassis to the Converter/Charger Bonding Lug.
- Using the attached power cord on the Converter/Charger, connect firmly to the 120 V AC receptacle



12 VDC Wiring– It is important to use the correct wire gauge for the specific model selected. As an example the model PM-32 is a 32 amp Converter/Charger that requires a 10 AWG wire.

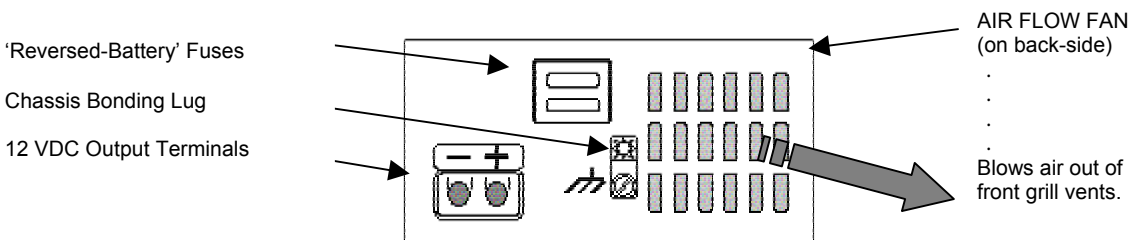
- The terminal marked **+** or **POS** is for the 12 VDC positive connection.
- The terminal marked **-** or **NEG** is for the 12 VDC negative connection.
- The 12 VDC output wiring does not require over-current protection because the Converter/ Charger limits current output. However, all electrical connections need to comply with the appropriate NEC code.

6. **TEST.** First, disconnect all loads and battery on the Converter/Charger by removing all 12 VDC connections from **+** or **POS**. Second, attach a multimeter instrument between the positive and negative terminals of the Converter/Charger. Then energize the 120 V A C converter circuit. Test for proper output power using the multimeter. Measure the output voltage from the positive and negative terminals. The voltage should read 13.6 +/- 0.2 VDC. Add 12 VDC load connections to about 2/3 of the rated capacity of the converter. Recheck the voltage, which should remain approximately the same as at no load.
7. **BATTERY.** With the 120 V A C disconnected, reconnect the **+** or **POS** positive terminal to a known good battery. With the converter 120 V A C energized, measure the voltage at the converter and at the battery. The voltage should be about the same in both locations. As with any battery it is important that the fluid level be checked on a regular basis. When continuously connected to any charging source all batteries will "Gas" and lose some fluid.



WARNING – Avoid Personal Injury / Product Damage

TROUBLESHOOTING



NOTE : Before removing and replacing the Converter/charger, perform the following checks:

- a. Disconnect the AC power
- b. Disconnect the wiring and Battery from the Converter Positive **+** output terminal.
- c. Re-connect the AC power to energize the Converter.
- d. Using a voltmeter, measure the voltage at the Converter **-** and **+** Output terminals.
 - > The Converter is OK if the voltage reading is between 13 VDC and 14 VDC (typically 13.6 VDC).
 - > Otherwise check the table below:

| CONDITION | POSSIBLE CAUSE |
|------------------------------|---|
| No 12 VDC output | <ul style="list-style-type: none">• Reversed battery fuses blown. (Battery wiring connections are reversed),• Severe overload or shorted load. Remove all loads and retest per above instructions.• Converter internal failure. |
| Converter cycles On & Off | <ul style="list-style-type: none">• Fan air flow is inadequate or blocked. (1" minimum free air space at each end required)• Converter internal failure. |
| Reversed Battery fuses blown | <ul style="list-style-type: none">• Battery wiring connections are reversed.• Defective battery, possible bad cells. |
| 12 VDC output is too low | <ul style="list-style-type: none">• Attached load exceeds rating of the Converter.• Defective battery, possible bad cells.• Converter internal failure. |

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