

powercharge™

BATTERY CHARGER
XP Series



480 V Models

PCXP-xxkW-yyyA-zzV

Preventive Maintenance Guide



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SAFETY PRECAUTIONS

BEFORE ATTEMPTING TO INSTALL AND OPERATE THE CHARGER, READ THIS MANUAL CAREFULLY

This manual contains important instructions for the **PowerCharge™ XP** series product line that shall be followed during installation and operation of the charger. Only qualified personnel should install, operate, or service this equipment.

SAVE THESE INSTRUCTIONS



- **High Voltages.** Lethal voltages are present within the charger enclosure whenever the AC line is energized and/or the battery/load is connected. The heat sinks and other internal components present the risk of electric shock.
- **Stored Energy.** To avoid the risk of electric shock, wait at least two minutes after de-energizing the AC line and disconnecting the battery/load before removing the cover.
- **High Current Levels.** Do not touch uninsulated battery connectors or terminals. All tools should be adequately insulated to avoid the possibility of shorting connections. Inspect cables often for damage to the insulation. Replace cracked or worn cables immediately.
- **Improper Connections.** If the charger is incorrectly wired to input or output devices or wiring is not in accordance with local safety codes and standards, the XP charger and/or its components are at risk of being destroyed.
- **Grounding.** The charger must be connected to an AC power supply incorporating an earth or ground. The grounding conductor must be of a size equal to or larger than the line (phase) conductors.
- **Explosive Gases.** Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during charge and discharge. To reduce the risk of ignition, follow these safety instructions as well as those published by the battery manufacturer. To minimize the potential for arcing and to reduce the risk of damage to the connector contacts, it is preferable to connect and disconnect a battery when the charger output is **OFF**.



- **Chemical Hazard.** Working with lead-acid batteries may result in exposure to highly corrosive acid. To protect eyes and skin, use the required **Personal Protective Equipment (PPE)** as mandated by your employer and local regulations. At a minimum, wear safety goggles and skin protection while connecting the battery charger or working in the vicinity of lead-acid batteries.
- **Follow the battery manufacturer's published instructions when installing, charging, and servicing batteries.**
- **Use only with rechargeable batteries.** Do not attempt to charge other battery types; doing so may cause equipment damage and result in serious personal injury.
- **Do not expose the charger to rain or snow.** The charger is **NOT** designed for outdoor use.



- **Adequate Cooling Required.** To prevent damage from overheating, proper airflow must be ensured. Do not restrict fan inlets or exhaust outlets. Do not mount the charger in a confined space or where the exhaust air will recirculate.
- **No User Serviceable Parts.** If service is required, contact Power Designers USA LLC or its service representative.
- **These instructions assume a certain level of competence by the installer and/or user.** The following practices and codes contain relevant information, and should be consulted for safe installation, testing, handling, and maintenance of rechargeable lead-acid batteries. All applicable state and local codes must be followed.
 - **National Electric Safety Code (NESC)**, ANSI/IEEE C2-2007 (or latest revision). Copies may be obtained by contacting: The Institute of **E**lectrical and **E**lectronics **E**ngineers, Inc. (**IEEE**), Publications Office, 10662 Los Vaqueros Circle, P.O. Box 3014, Los Alamitos, CA 90720
www.ieee.org

- **National Electrical Code (NEC)** NFPA-70 (or latest version) available from:
National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269
www.nfpa.org

- **Federal Codes**
 - 29CFR1926.441 Batteries and Battery Chargers
 - 29CFR1910.305 (j) Wiring Methods, Components and Equipment for General Use
 - OSHA Directive STD 01-08-002, including 29CFR1910.151(c) Medical Services and First Aid; 29CFR1926.50 and 29CFR1926.51, Medical Service and First Aid, and Sanitation, respectively; applicable to electric storage battery charging and maintenance areas.

- **EMC Compliance**

This device complies with Part 15 section 103 of FCC Rules as a digital device used exclusively as a power system in public utilities or industrial plants.

Operation is subject to the following two conditions:

 - (1) This device may not cause harmful interference.
 - (2) This device must accept any interference received, including interference that may cause undesired operation.

480V Model Numbers

PCXP-10kW-200A-48V
PCXP-20kW-400A-48V
PCXP-30kW-600A-48V
PCXP-10kW-120A-80V
PCXP-20kW-240A-80V
PCXP-30kW-360A-80V

PREVENTIVE MAINTENANCE PROCEDURE

The following procedure describes proper preventive maintenance of **PowerCharge™ XP** series chargers.

1. Charger Inspection

- a. Charger Output Cables
 - i. Verify the cables are free of cuts or exposed wire.
 - ii. Verify the connector housings are free of breaks, including any handles or other accessories.
- b. Verify the incoming power cables are free of cuts or exposed wire.
- c. Displayed Values
 - i. Verify the displayed current is appropriate with the number of drawers in the system (120 A, 240 A, 200/250 A, 360 A, 400/500 A, 600 A).
- d. Verify the charger is programmed for the battery voltage and capacity using the Palm/Pocket PC software.
- e. Clean filter monthly per Section 2.

2. Installing / Removing Air Filter

The charger is equipped with an air filter located on the inside of the louvered door. The air filter needs to be checked monthly and cleaned if needed.

ATTENTION: Before installing, clean the filter using soap and water, and dry thoroughly, or blow out debris in the opposite direction of airflow with compressed air.

To remove the filter for cleaning or replacement:

- a. Open the charger door and locate the filter (Figure 1).



Figure 1: Air filter access

- b. Pull the frame housing the filter out to ease removal of the filter.
- c. Slide the filter out. To reinstall, slide the filter into the frame until fully inserted (Figure 2).



Figure 2: Installing air filter

The wire-frame side of the filter and the arrow on the top of the filter must point into the charger.

END OF PREVENTIVE MAINTENANCE PROCEDURE