



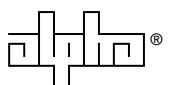
# PWE Series Enclosures



## PWE Battery Enclosure (BE)

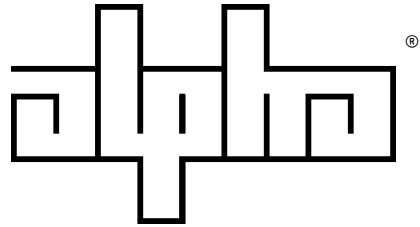
Field Upgrade Installation Manual

*Effective: October, 2002*



*Power* **Alpha Technologies.** Protecting The Power in Communications.

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# **PWE Battery Enclosure (BE)**

## **Field Installation Manual**

**033-077-C0-002 Rev. B**

**October, 2002**

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**NOTE:** This manual covers the installation of the PWE Battery Enclosure. Always work with the local utilities when connecting the enclosure to these utilities and observe all local and national laws which may be applicable for your area.



**NOTE:** Photographs contained in this manual are for illustrative purposes only. These photographs may not exactly match your installation.



**NOTE:** Review the drawings and illustrations contained in this manual before proceeding. If there are questions regarding the safe installation and operation of this enclosure or powering system, please contact Alpha Technologies or your nearest Alpha representative.

## Table of Contents

1.1	BE Installation .....	9
1.1.1.	BE Kit Contents .....	10
1.1.2.	Mounting Bracket Installation .....	11
1.1.3.	Rain Guard Installation .....	13
1.1.4.	Enclosure Installation .....	14
1.1.5.	Battery Installation .....	15
1.1.6.	Cable Installation .....	16
1.1.7.	Final Assembly .....	17
1.1.8.	Completed Assemblies .....	17

## List of Figures

Fig. 1-1	Placing Template .....	11
Fig. 1-2	Bracket Installation .....	12
Fig. 1-3	Removing Lid and Door .....	12
Fig. 1-4	Installing Rain Guards .....	13
Fig. 1-5	Mounting BE Enclosure .....	14
Fig. 1-6	Battery Installation .....	15
Fig. 1-7	Cable Routing .....	16
Fig. 1-8	Replacing Doors .....	17
Fig. 1-9	Grounding Lug .....	17

# IMPORTANT SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL



To reduce the risk of electrical shock, injury or death caused by explosion of fuel or moving parts, and to ensure the safe operation of this unit, the following symbols have been placed throughout the manual. Where these symbols appear, servicing should be performed only by qualified personnel.



## **DANGEROUS VOLTAGE**

This symbol indicates a "dangerous voltage" exists in this area of the product. Use caution whenever working in the area to prevent electrical shock.



## **INHALATION HAZARD - DON'T BREATHE VAPORS**

This symbol indicates an "inhalation hazard" exists in this area of the product. Use caution whenever working in the area to prevent possible inhalation of harmful (fuel or exhaust) vapors.



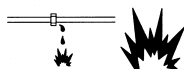
## **NO MATCHES OR OPEN FLAMES**

This symbol indicates a fire or explosive hazard exists in this area of the product. Use caution whenever working in the area to prevent possible combustion fuel vapors.



## **MECHANICAL OR MOVING PARTS HAZARD**

These symbols indicate the presence of a "mechanical or moving parts hazard" in this area of the product. Use caution whenever working in the area to prevent possible injury to the operator or servicepersonnel.



## **LEAK HAZARD**

This symbol indicates a "leak hazard" exists in this area of the product. Use caution whenever working in the area to prevent and correct any leaks detected.



## **HOT SURFACES**

This symbol indicates the presence of high temperatures which result from the operation of the system. To prevent burns, do not touch these areas while the system is in operation or immediately after it has been turned off.



## **ATTENTION**

This symbol indicates important installation, operation or maintenance instructions. Always follow these instructions closely.

### **SAFETY PRECAUTIONS**

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- The system must be serviced only by qualified personnel.
- Remove all rings, watches and other jewelry before servicing batteries or servicing the system.
- Always use proper lifting techniques whenever handling units, modules or batteries.
- If batteries are being stored prior to installation, they should be charged at least once every three months to ensure optimum performance and maximum battery service life.
- The battery pack, used to provide backup power, contains dangerous voltages. Battery inspection and replacement must be performed by qualified personnel.
- Always wear protective clothing, insulated gloves and eye protection (i.e. safety glasses or a face shield) whenever working with batteries.
- Always carry a supply of water, such as a water jug, to wash the eyes or skin in the event of exposure to battery electrolyte.
- Do not allow live battery wires to contact the enclosure chassis. Shorting battery wires can result in a fire or possible explosion.
- Batteries must be inspected every three to six months for signs of cracking, leaking or swelling.
- Always replace batteries with those of an identical type and rating. Never install old or untested batteries.
- Avoid using uninsulated tools or other conductive materials when handling batteries or working inside the enclosure.
- Spent or damaged batteries are considered environmentally unsafe. Always recycle used batteries or dispose of in accordance with all Federal, State, and local regulations.

## **Battery Safety Notes**

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### **Chemical Hazards**

Any gelled or liquid emissions from a Valve-Regulated Lead-Acid (VRLA) battery is electrolyte which contains dilute sulfuric acid which is harmful to the skin and eyes; is electrically conductive; and is corrosive.

If electrolyte contacts the skin, wash immediately and thoroughly with water.

If electrolyte enters the eyes, wash thoroughly for 10 minutes with clean water or a special neutralizing eye wash solution and seek immediate medical attention.

Neutralize any spilled electrolyte with the special solutions contained in a "spill kit" or with a solution of 1 lb. Bicarbonate of soda to 1 gal. of water.

### **Fire, Explosion, and Heat hazards**

Lead acid batteries can contain an explosive mixture of hydrogen gas which can vent under overcharging conditions.

Do not smoke or introduce sparks in the vicinity of the battery.

Prior to handling the batteries, touch a grounded metal object, such as the rack, to dissipate any static charge that may have developed in your body.

Do not charge batteries in a sealed container. If contained, assure the container or cabinet and room have adequate ventilation to prevent an accumulation of potentially dangerous gas.

## **IMPORTANT INSTALLATION NOTES**

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The system must be installed **ONLY** by qualified service personnel.

ALPHA TECHNOLOGIES is not responsible for broken welds or other damage to the cabinet caused by improper installation.

All dimensions are given in inches.

For further information regarding this installation, contact ALPHA TECHNOLOGIES or your nearest ALPHA representative.

For general product information and Customer Service  
7:00AM to 5:00PM Pacific Time  
1-800-863-3930

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To obtain complete Technical Support,  
7:00AM to 5:00PM Pacific Time  
*or*  
For after-hours Emergency support  
7 days per week, 24 hours a day  
1-800-863-3364



**NOTE:**

Alpha Technologies' products are subject to change through continual improvement processes. Therefore, specifications and/or design layouts may vary slightly from descriptions included in this manual. Updates to the manual will be issued when changes affect form, fit or function.

**Save these instructions for future reference**

## 1.1 BE Installation

### Overview

The PWE Battery Enclosure was designed to allow the customer to add additional batteries in the field for additional standby/run time.

Upon receipt, the enclosure should be unpacked and inspected for shipping damage. The following items should be enclosed:

1. Battery Enclosure (Alpha P/N 033-077-20)
2. Battery Cable 'Y' Adapter (Alpha P/N 874-655-20)
3. Battery Cable Kit (Alpha P/N 874-202-21)
4. Pole Mounting Bracket
5. Bracket Hole Drilling Template
6. New PWE Door
7. New PWE Lid
8. Rain Guards
9. Mounting Hardware

### **Tools and Materials Needed:**

Digital Volt-Ohm Meter  
Hand Operated Rivet Gun with .156" nosepiece  
3/4" Drill Motor  
3/4" Auger Bit (long enough to drill through pole)  
7/16" Wrenches and Sockets  
Torque Wrench  
3 Batteries (manufacturer and type to match existing batteries)



**NOTES:** The total combined weight of the PWE and BE is approx. 600 pounds, verify stability of the mounting pole before installation.

Secure permission of pole owner for mounting of enclosure

Obtain, review, and follow all appropriate electrical, building and installation codes and practices of the local area and utilities .

Verify lifting equipment is safe and capable of weight requirements.

Verify area around, above and below is clear of all obstructions which may pose a hazard during installation.

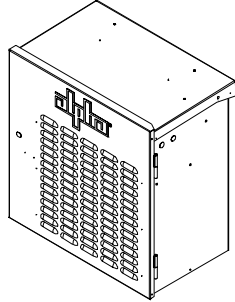
Post necessary hazard warnings for the work area.

# 1. Installation

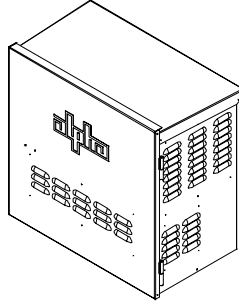
## 1.1 BE Installation, *continued*

### 1.1.1. BE Kit Contents

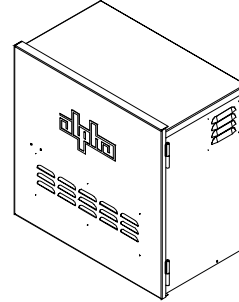
Listed below each version of PWE are the parts required for each installation. All extra parts may be disposed of.



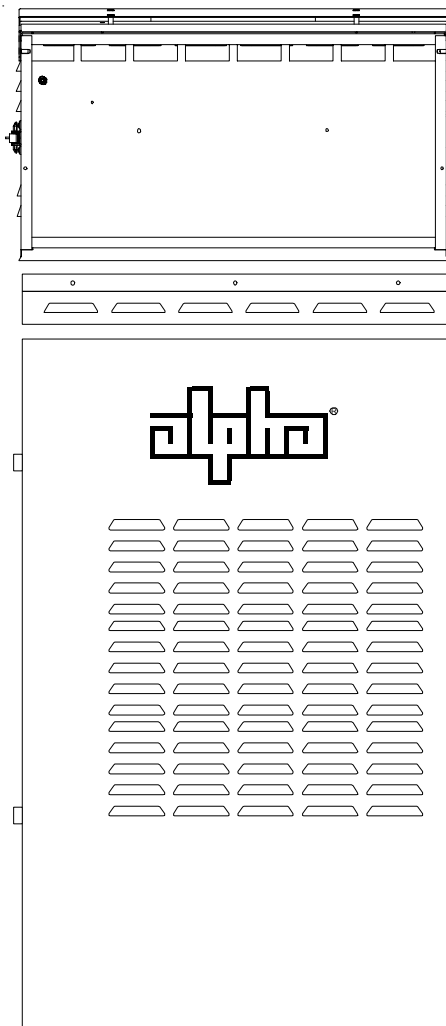
**New PWE**  
 Battery Enclosure (A)  
 Rear Rain Guard (B)  
 Door (C)  
 Drilling Template (D)  
 Mounting Bracket (E)  
 Rubber Bumpers (G)



**Type II PWE**  
 Battery Enclosure (A)  
 Door (C)  
 Drilling Template (D)  
 Mounting Bracket (E)  
 Side Rain Guards (F)



**Type I PWE**  
 Battery Enclosure (A)  
 Door (C)  
 Drilling Template (D)  
 Mounting Bracket (E)



**A** PWE-BE

**B** Rear Rain Guard

**C** Door

**D** Drilling Template

**E** Mounting Bracket

**F** Side Rain Guards

**G** Rubber Bumpers

1.1 BE Installation, *continued*

## 1.1.2. Mounting Bracket Installation



**WARNING:** Follow all manufacturer's operating and safety instructions for the use of power tools and punch drivers. Set BATTERY BREAKER on the power supply to the OFF position.  
**Secure service power to the enclosure for the duration of the installation.**

1. Place the drilling template on top of the upper pole bracket, and hold flush against the pole. Use the upper hole for the New UPE, and the lower hole for the Type I and Type II PWE.

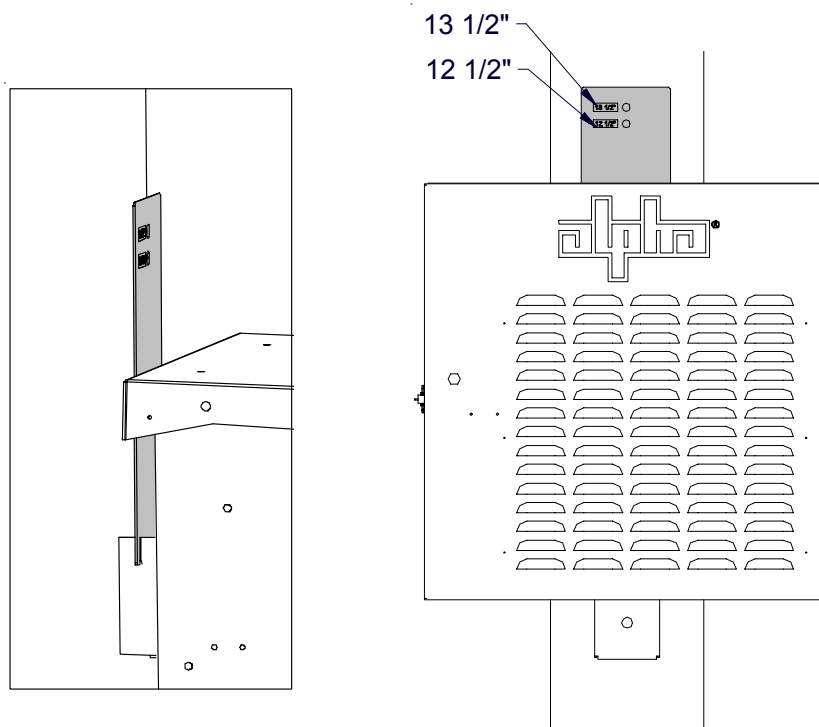


Fig. 1-1 Placing Template

2. Mark the hole location, and remove the template. Drill a 3/4" hole through the pole.

# 1. Installation

## 1.1 BE Installation, *continued*

### 1.1.2. Mounting Bracket Installation, *continued*

3. Install the mounting bracket using a 1/2" bolt, washers, and nut.

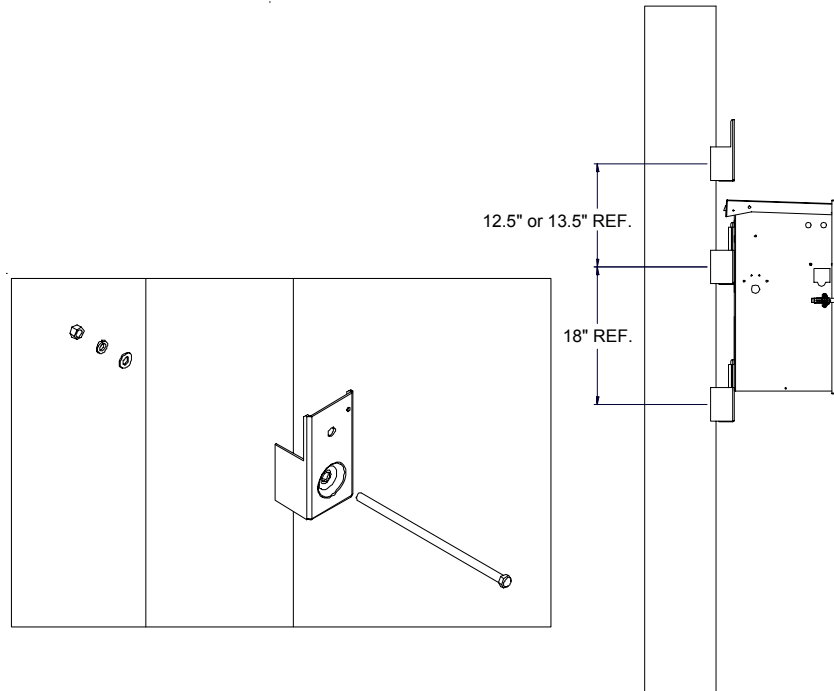


Fig. 1-2 Bracket Installation

2. Remove the PWE door and lid.

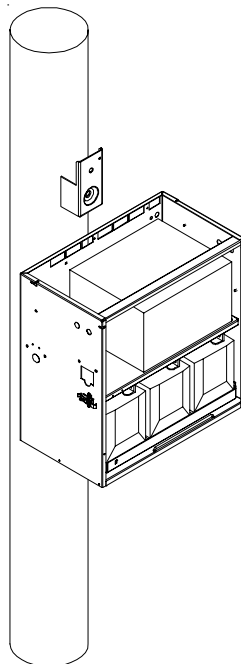


Fig. 1-3 Removing Lid and Door

1.1 BE Installation, *continued*

1.1.3. Rain Guard Installation

1. If required, rivet the rain guards to the PWE-BE enclosure.
2. Using a #19 drill bit (0.166"), drill out the rivet hole 'dimples' on the sides or rear of the enclosure. Install the rain guards with the rivets included in the PWE-BE kit.

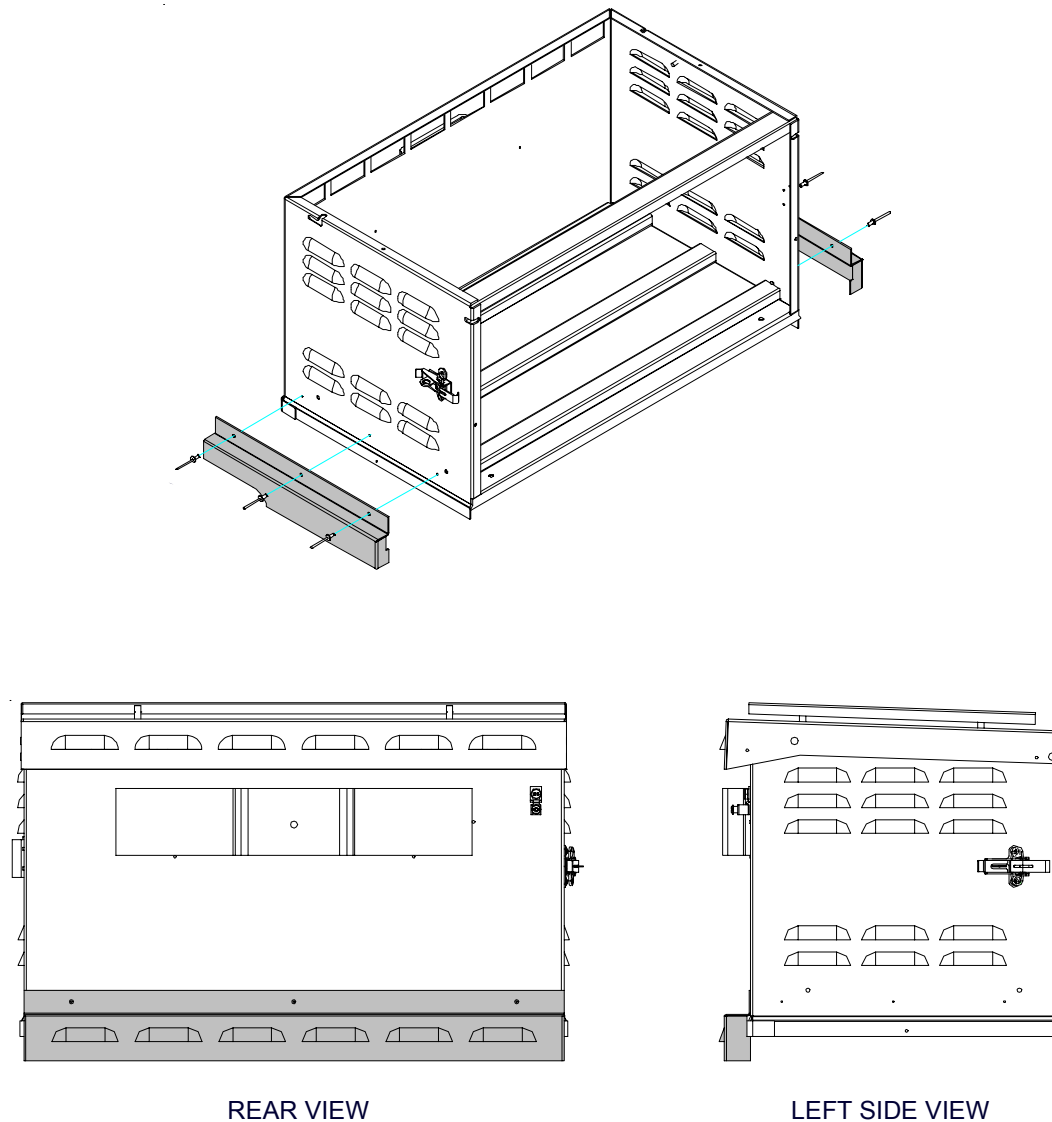


Fig. 1-4 Installing Rain Guards.

# 1. Installation

## 1.1 BE Installation, *continued*

### 1.1.4. BE Mounting

1. Remove the lid from the PWE, and set aside. For the New Style PWE, attach bumpers to the upper door jams (see drawing below). Align the pole mount strap on the PWE-BE with the mounting plate on the pole. Lower the BE enclosure onto the top of the PWE. Verify that the flange on the bottom of the BE enclosure fits over the OUTSIDE of the PWE enclosure on both sides and the back. Tighten the retaining bolt on the PWE-BE pole mount strap to secure the BE enclosure to the mounting plate.

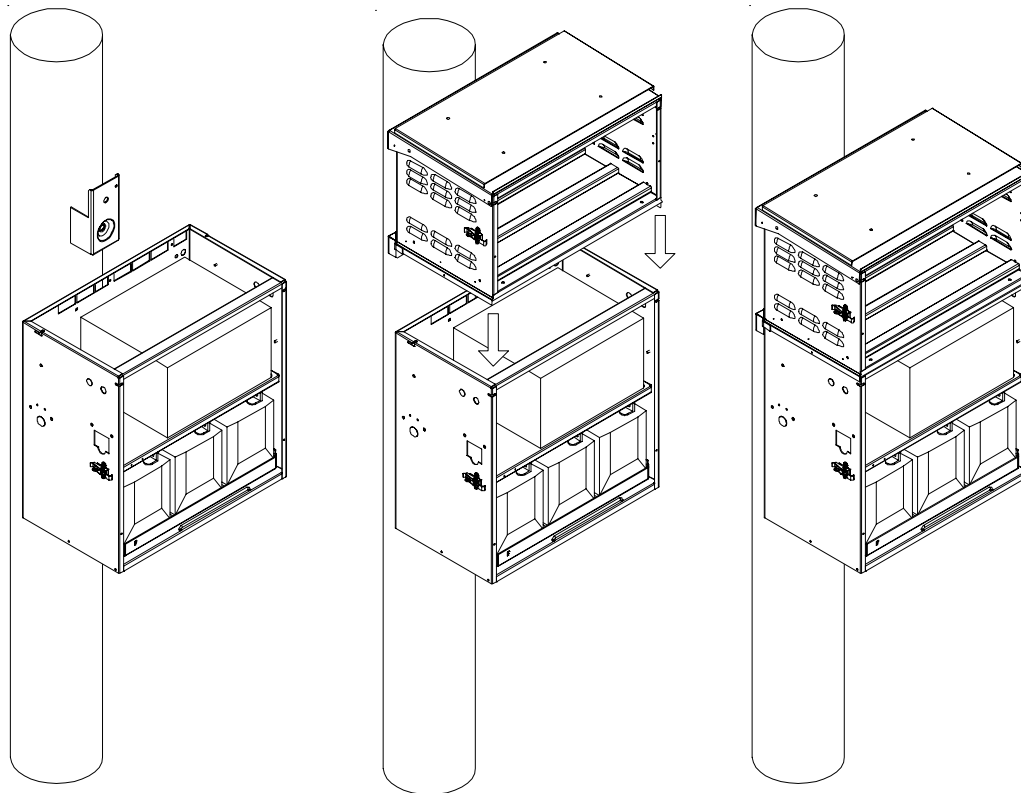
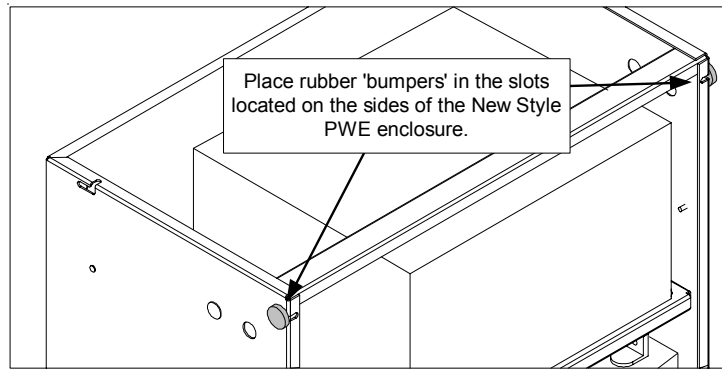


Fig. 1-5 Mounting BE Enclosure

1.1 BE Installation, *continued*

1.1.5. Battery Installation

1. Remove the BE enclosure lid, and hang to the side on the lanyard. Install three batteries as shown below. Attach Battery Cable Kit according to the diagram.
2. Using a multimeter, verify that the battery pack has at least 36 VDC at the connector. Verify polarity is correct (red = pos, black = neg)

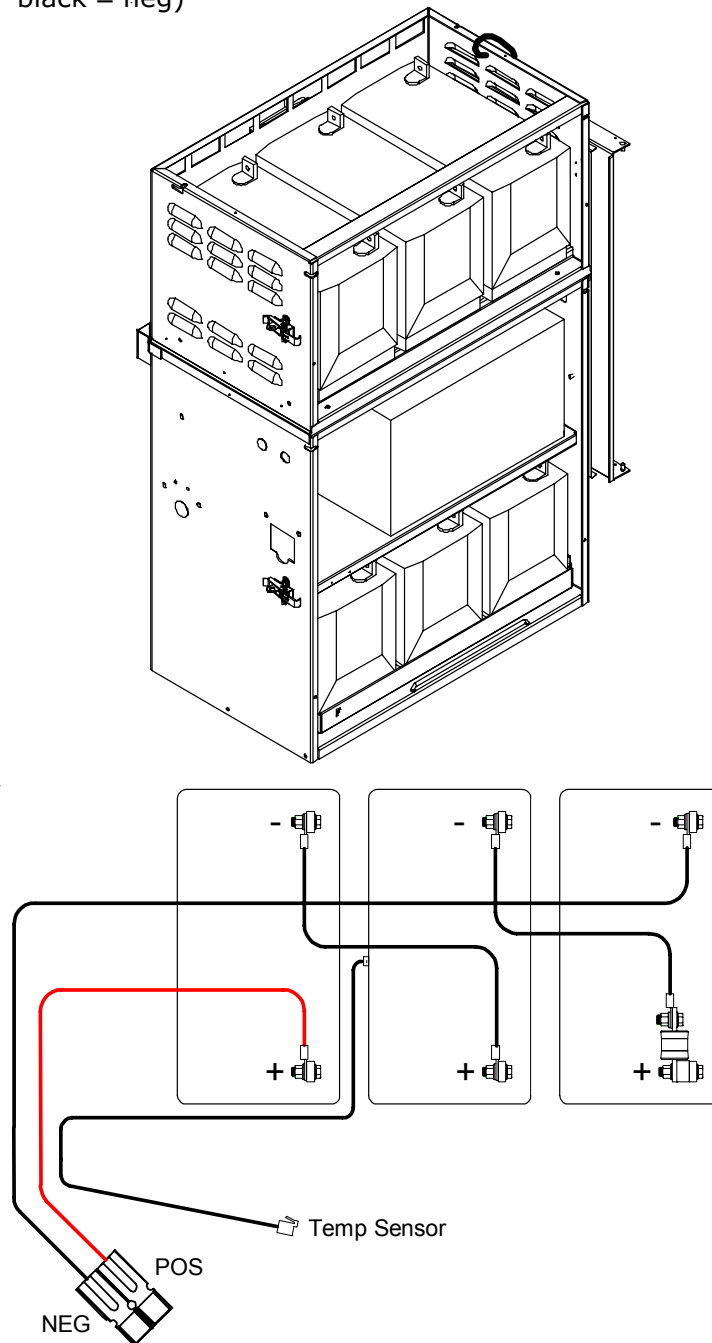


Fig. 1-6 Battery Installation

# 1. Installation

## 1.1 BE Installation, *continued*

### 1.1.6. Cable Connections

1. Set the BATTERY BREAKER on the power supply to the OFF position. Unplug the existing battery pack from the front of the power supply.
2. Plug the 'Y' adapter into the front of the power supply. Connect both battery packs to the remaining plugs of the 'Y' adapter.

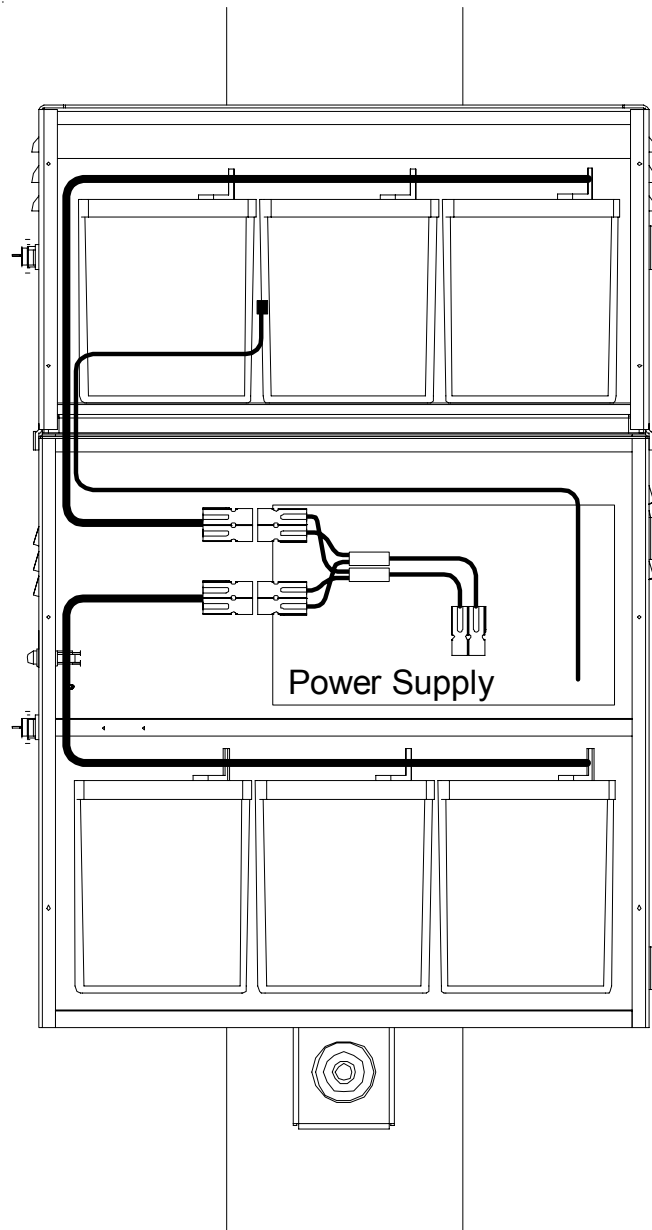


Fig. 1-7 Cable Routing

1.1 BE Installation, *continued*

1.1.7. Final Assembly

1. Reinstall the BE enclosure lid
2. Install the new front door
3. Run a new #6 solid copper grounding wire from the grounding lug on the back of the BE enclosure to the grounding rod at the base of the pole (Fig. 1-9).

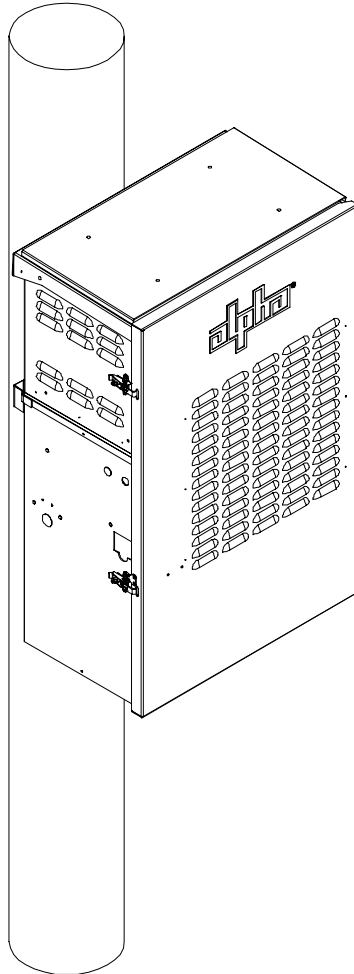
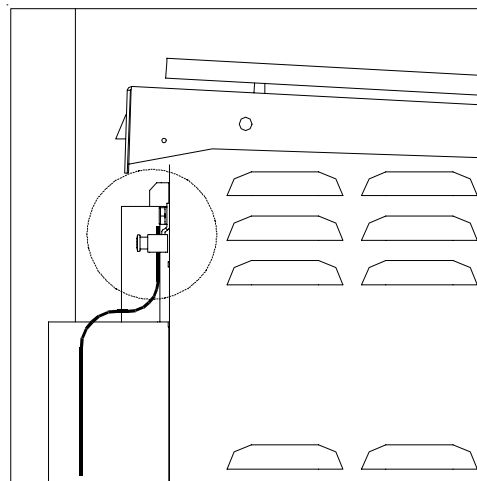


Fig. 1-8 Replacing Doors

Fig. 1-9 Grounding Lug



# 1. Installation

## 1.1 BE Installation, *continued*

### 1.1.8. Completed Assemblies



New PWE



Type II PWE



Type I PWE



# Power

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