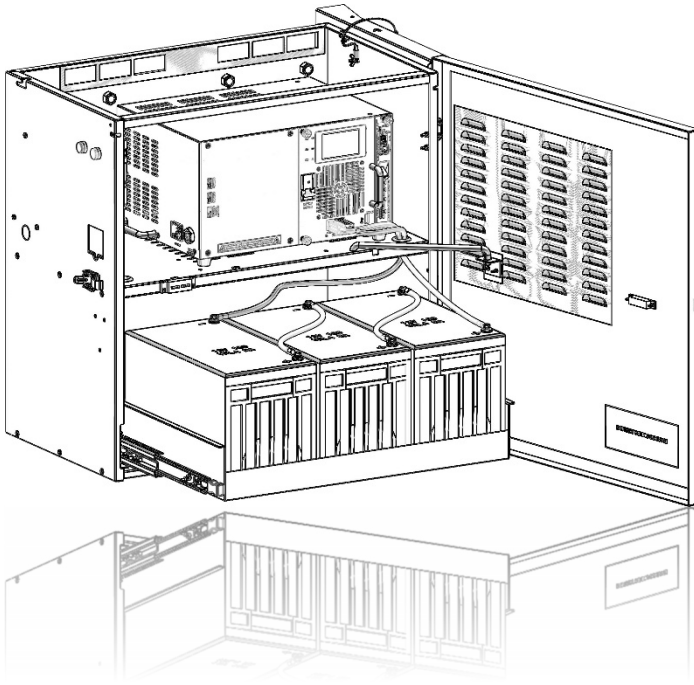


# PWE-3 Power Supply *Outdoor Enclosure*



## User Manual

*Effective: February 2024*

# **SAFETY NOTES**

## **NOTE**

Only skilled or qualified person can service this equipment (hereinafter may be also referred as this “unit” or this “product”). Person services this equipment is cautioned to review and be fully aware of the drawings and illustrations contained in this manual before proceeding. Please contact the supplier or the manufacturer if any question regarding operation safety. Save this document for future reference.

## **NOTE**

Photographs contained in this manual are for illustrative purposes only. These photographs and installation sequence may not match your installation in the field. Please review and be fully aware of all contents of this manual before proceeding.

## **NOTE**

The manufacturer shall not be held liable for any damage or injury involving its enclosures, power supplies, generators, batteries, or other hardware if used or operated in any manner or subject to any condition not consistent with its intended purpose, or is installed or operated in an unapproved manner, or improperly maintained.

## **NOTE**

Due to continuing improvements, specifications of this equipment and contents of this document are subject to change without notice.

## **NOTE**

Following symbols have been placed throughout this manual. Where these symbols appear, use extra care and attention.



**WARNING!**

Presents safety information to PREVENT INJURY OR DEATH to the technician or user.



**CAUTION!**

Indicates safety information intended to PREVENT DAMAGE to material or equipment.

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# 1. OVERVIEW

## 1.1 SAFETY PRECAUTIONS

- ◆ Read Technical manual (this document) carefully before proceeding with any part of the unit.
- ◆ PWE series outdoor enclosure provides an installation site for outdoor power supply (e.g. MD series). Lethal voltages are present within the power supply and electrical boxes. Never assume that an electrical connection or conductor is not energized. Check the circuit with a voltmeter with respect to the grounded portion of the enclosure (both AC and DC) prior to any installation or removal procedure.
- ◆ The enclosure must be well earthed.
- ◆ A licensed electrician is required to install permanently wired equipment.
- ◆ Input voltages can range up to 240Vac. Ensure that utility power is disabled before beginning installation or removal.
- ◆ Ensure no liquids or wet clothes contact internal components.
- ◆ Hazardous electrically live parts inside this unit are energized from batteries even when the AC input power is disconnected.
- ◆ Verify the voltage requirements of the equipment to be protected (load), the AC input voltage to power supply, and the output voltage of the system prior to installation.
- ◆ Always use appropriate lifting techniques whenever handling units, modules or batteries.
- ◆ Use a bucket truck, or suitable climbing equipment such as a safety harness and climbing spikes, whenever installing or servicing pole-mount installations.
- ◆ Keep hands and tools clear of fans. Fans are thermostatically controlled and will turn on automatically.
- ◆ Power supplies can reach extreme temperatures under load.
- ◆ Use caution around sheet metal components and sharp edges.
- ◆ The supplier or the manufacturer does not assume responsibility for any damage or injury involving its power supplies, housings or cabinets, batteries or other hardware or software when used for an intended purpose, installed or operated in an unapproved manner, or improperly maintained.

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## 1.2 BATTERY NOTES

- ◆ Battery must be serviced only by qualified personnel.
- ◆ Remove all of rings, watches and other jewelries before servicing batteries.
- ◆ Always refer to battery manufacturer's recommendation for selecting correct spare parts of the battery.
- ◆ Used or damaged batteries are considered environmentally unsafe. Always recycle used or damaged battery.
- ◆ Do not open or mutilate the battery. Failure to do so can result in poisonous electrolyte leaking.
- ◆ Never let battery get close to any heating source and never incinerate battery. Failure to do so may cause explosion.
- ◆ Always wear protective clothing, insulated gloves and face shield whenever working with batteries.
- ◆ Always carry a supply of water to wash eyes and/or skin in the event of exposure to batteries electrolyte.
- ◆ DO NOT short battery electrodes. It can cause fire, electrical shock or possible explosion.
- ◆ Check if voltage is present anywhere of the battery before touching batteries.
- ◆ A battery can presents a risk of high tension between batteries electrodes and the ground if battery loop is not isolated from input voltage loop.
- ◆ Batteries need to be recharged regularly for expected service life. It is recommended to recharge batteries at least once every 4~6 months if not in service for a long time.
- ◆ Prior to handling the batteries, touch a grounded metal object to dissipate any static charge that may have developed on your body.
- ◆ Whenever replacing battery, the unit must be turned off and disconnected from all inputs and outputs.
- ◆ Use special caution when connecting or adjusting battery cabling. An improperly connected battery cable or an unconnected battery cable can make contact with an unintended surface that can result in arcing, fire, or possible explosion.
- ◆ Proper venting of the enclosure is recommended. Follow the Battery Manufacturer's approved transportation and storage instructions.

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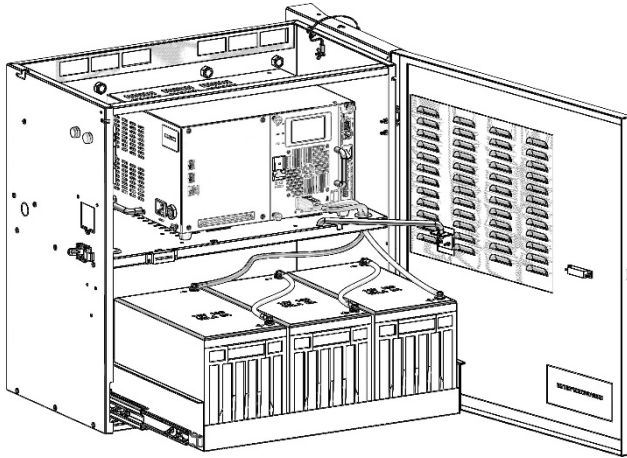
### 1.3 BRIEF INTRODUCTION

PWE Series Outdoor Enclosure provides an ideal installation site for outdoor / indoor powering distribution in cable and broadband application.

Aluminum welded construction and durable powder coating finish enabled the unit to accommodate all-climates applications. Each enclosure comes with a lockable and removable front door and a removable lid. Heavy-duty battery slide tray(s), as standard feature, is very useful whenever handling and servicing batteries. A generator can be connected to the power supply inside the enclosure via an easily accessible generator cabling door located at left wall of the enclosure.

Service receptacle box with breaker inside the enclosure offering easily accessible utility power connection and disconnection. Power inserter for AC power / RF signal distribution is available as optional feature. Optional battery cabling hub that improves wire management inside enclosure can be factory-installed before delivery or user-installed in the field. Optional cooling fan improves heat dissipation, which is extremely useful especially for installations in those hot districts. Enhanced security device, as another optional feature, enhances physical security of enclosure and prevent a strong visual deterrent.

PWE series outdoor enclosure is designed to be installed on a pole or on a flat wall using the installation kits come with the enclosure. Ground mounting installation kits are also available as an optional feature for installations aside the roads.



PWE-3 Enclosure w/ Power Supply & Batteries

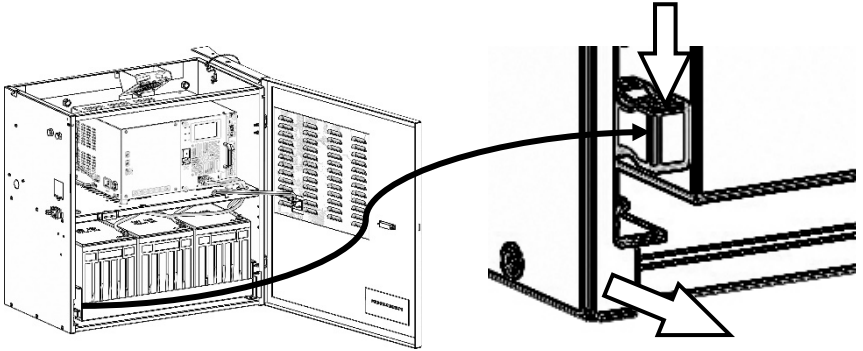
#### 1.4 SPECIFICATIONS

Model	Battery Tray(s)	Battery Capacity	Dimensions (WHD)	Weight (kgs / lbs.)
PWE-3	1	3	636 x 645 x 400 mm 25.0" x 25.4" x 15.7"	24 / 52.9

Specifications

## 1.5 BATTERY TRAY OPERATION

Battery tray of PWE series is equipped with locking slide(s). The latch is located on left side of each battery tray and is equipped with a cap (typically blue).



Open Battery Tray

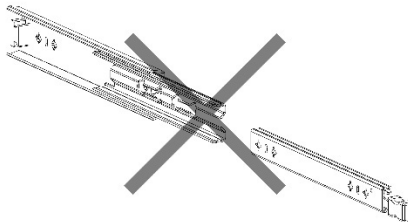
Push the latch down, pull out the battery tray and release the latch once it leaves “closed” position. Continue pulling the battery tray out till the latch locks into “open” position.

To close it, push the latch down and push the battery tray into enclosure till the latch locks into “closed” position.



### CAUTIONS!

Slides installed on PWE-3, PWE-6 and PWE-9 are detachable. Keep latch being pushed down and pull the battery tray will possibly detach the battery tray from enclosure. This may cause injury to service personnel and damage the battery tray and/or contents inside the battery tray.



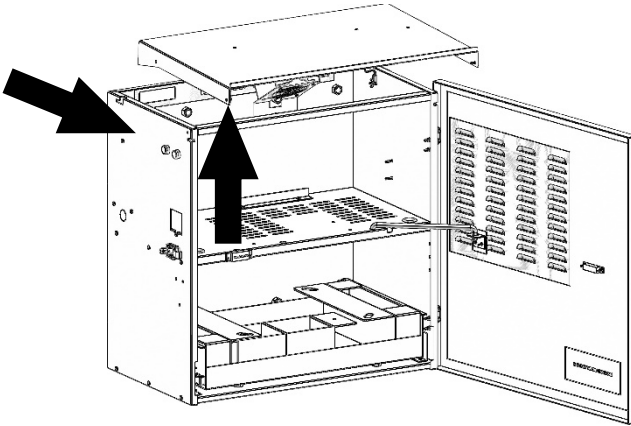
Operation of Sliding Battery Tray



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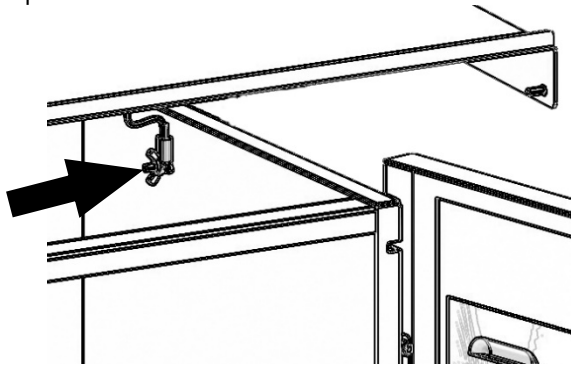
## 1.6 LID REMOVAL

Lid of PWE series is removable. Face front of the enclosure, pull out the lid and then pull it up.



Open Lid

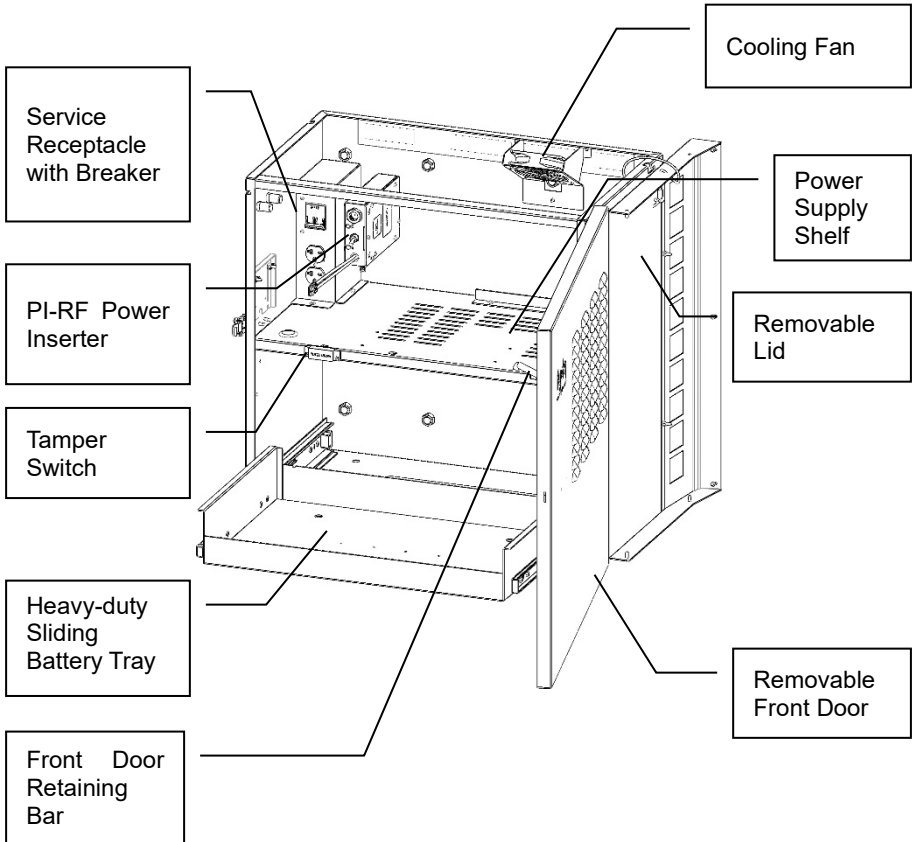
The lid can be completely removed from the enclosure by disconnecting the retaining strap.



Remove Lid

## 1.7 LAYOUT

### 1.7.1 Front View

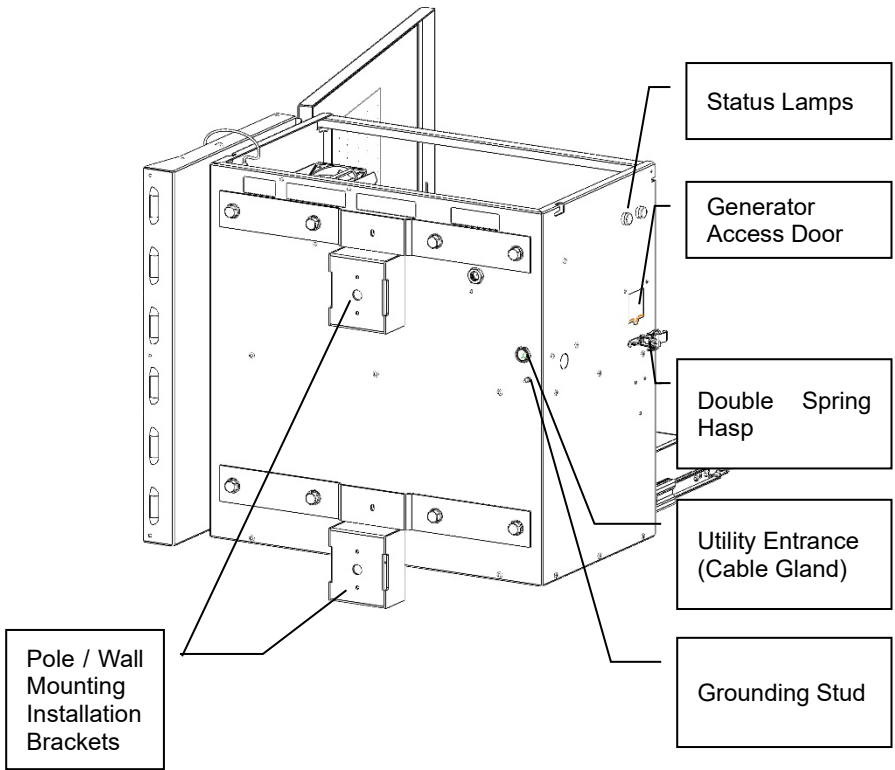


Layout - Front View

#### **NOTE**

- 1) Photograph is for illustrative purpose only. Photographs may not match your installation.
- 2) Due to continuing improvements, configuration of the product is subject to change without notice.

## 1.7.2 Rear View



Layout – Rear View

### **NOTE**

- 1) Photograph is for illustrative purpose only. Photographs may not match your installation.
- 2) Due to continuing improvements, configuration of the product is subject to change without notice.

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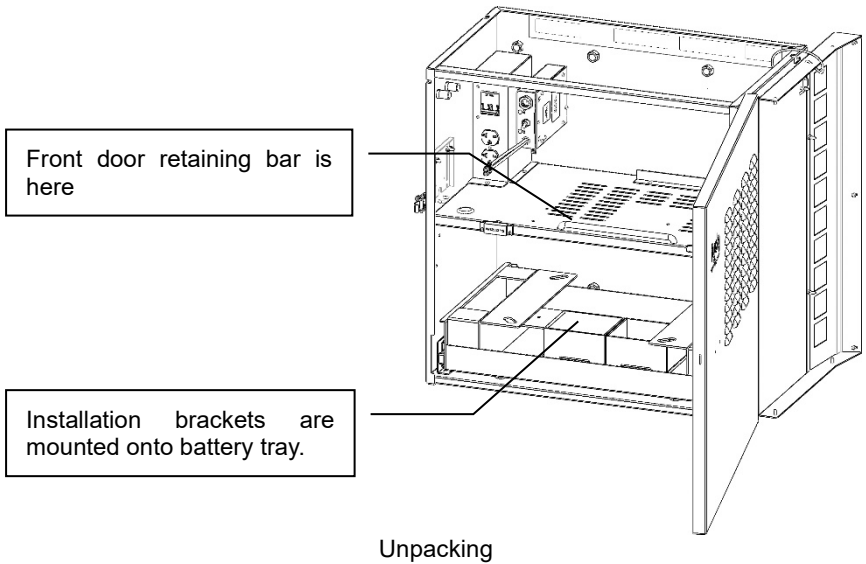
## 2. INSTALLATION

### 2.1 INSTALLATION NOTES

- ◆ Read Technical Manual (this document) before proceeding with installation of the enclosure.
- ◆ Prior to installation, contact local utilities, local building maintenance departments, and cable / piping locator services to ensure that installation does not interfere with existing utility or building cables/piping.
- ◆ Always use appropriate lifting techniques whenever handling units, modules or batteries.
- ◆ Use a bucket truck, or suitable climbing equipment such as a safety harness and climbing spikes, whenever installing or servicing pole-mount installations.
- ◆ Never attempt to transport the enclosure with power supply or batteries installed inside. It may cause injury to personnel installing this equipment or damage the enclosure or power supply / batteries inside the enclosure.

### 2.2 CONTENTS OF THE PACKING

Most of components / features are mounted inside the enclosure for shipping safety. Remove the enclosure from the shipping container and open door of the enclosure. It looks a little different from figures in Layout section.



Two brackets for pole / wall mounting installation are fixed inside battery tray. Loosen the bolts and remove them from the locations.

---

Carefully inspect the contents of the shipping container. If any items are damaged or missing, contact the supplier immediately. Most shipping companies have only a short claim period.

### **2.3 PRE-INSTALLATION INSPECTION**

During shipping, movement of components may occur. Inspect the enclosure for possible shipping-related failures, such as loosened or damaged connectors. Correct any discrepancies before proceeding with installation.



#### **CAUTIONS!**

Use the original shipping container if the unit needs to be returned for service. If the original container is not available, make sure the unit is packed with at least three inches of shock-absorbing material in all orientations to prevent shipping damage. Neither the supplier nor the manufacturer is responsible for damage caused by improper packaging on returned units.

### **2.4 POLE MOUNTING INSTALLATION**

With standard installation kits, PWE series enclosure can be easily installed on a wooden pole or on a concrete pole.

#### **2.4.1 Wooden Pole Installation**

Following tools and material may be required before the installation and these tools and material are prepared by users.

- ✓ Machine Bolts: 16mm (or 5/8") diameter, length to suit the pole, 2pcs for PWE-3
- ✓ Flat Washers: 16mm (or 5/8") diameter, 2pcs for PWE-3
- ✓ Hex Nuts: 16mm (or 5/8") diameter, 2pcs for PWE-3
- ✓ Drill with 18mm (or 11/16") diameter drill bit and associated spanner, socket or wrench
- ✓ Hammer (or mallet) and Tape measure

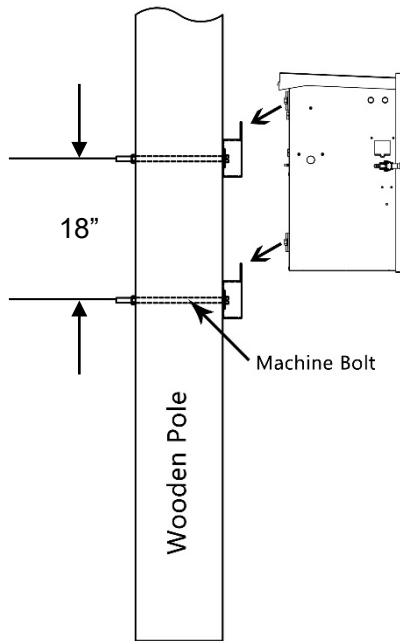
#### **Procedures**

- 1) Remove the installation kits from battery tray.
- 2) Mark position of the upper bracket on the pole and drill a hole completely through the pole.
- 3) Mark position(s) for lower bracket(s) on the pole vertically. Spacing between holes is given below for reference.

Enclosures	Nr. of Holes	Center-to-Center Distance
PWE-3	2	18 in / 457 mm

### Pole & Wall Mounting Holes

- 4) Drill the rest of the holes on the pole.
- 5) Secure the brackets to the pole using machine bolts, washers and nuts.
- 6) Make sure the bolts and nuts are fully tightened.
- 7) Lift the enclosure onto the brackets and properly seat the enclosure on the brackets.



### Wooden Pole Installation

- 8) Verify the installation and make sure it's firm and reliable.
- 9) Now the enclosure is ready to proceed with installations / connections of other components.

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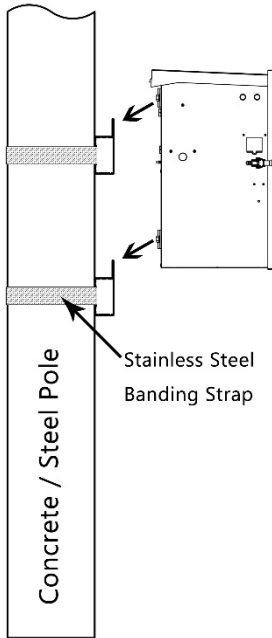
## 2.4.2 Concrete / Steel Pole Installation

Tools and materials required and prepared by the users:

- ✓ Banding Strap (or equivalent): stainless steel, rated to support loaded enclosure and sized for diameter of pole. 2 sets for PWE-3
- ✓ Assorted sockets

### Procedures

- 1) Run the strap through slots of the upper bracket.
- 2) Center the lower bracket(s) on the pole and verify installation height. Spacing between strap(s) is 18"
- 3) Fully tighten the straps to secure the brackets.
- 4) Lift the enclosure onto the brackets and properly seat the enclosure on the brackets.



Concrete / Steel Pole Installation

- 5) Verify the installation and make sure it's firm and reliable.
- 6) Now the enclosure is ready to proceed with installations / connections of other components.

## 2.5 GROUND MOUNTING INSTALLATION

Optional grounding mount installation kits enable user to install the enclosure on a pad aside the road or in the field.



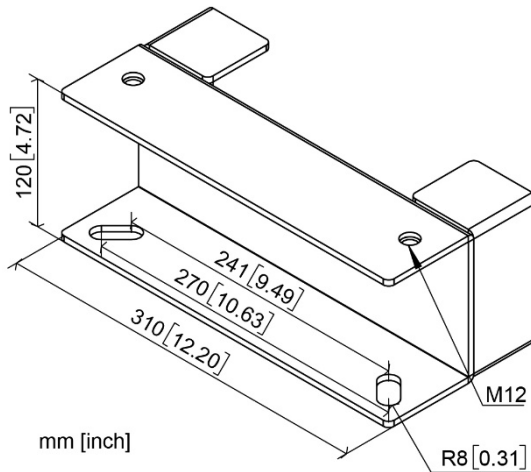
### CAUTIONS!

DO NOT transport the enclosure with batteries inside it. It is possible to injure the installers and damage the enclosure and/or batteries.

We can't anticipate all the ways that a vehicle could threaten equipment installed aside the road or determine what kind of protection is appropriate for a specific installation. But it's recommended that:

- ✓ The installation site shall have enough room for service personnel to open front door and lid of the enclosure.
- ✓ The location shall be away from residence if possible and be away from sprinkler system or other forced water.
- ✓ Select a location in a shade to minimize effects of solar loading.
- ✓ Install the equipment in an area with good airflow for heat dispersion.
- ✓ Build a concrete pad for the installation and install the equipment on the pad, instead of on the ground directly.
- ✓ Consider convenience of utility cables.
- ✓ Place an alert plate and install bollard posts to protect the installation.
- ✓ Follow local codes and contact authority before the installation.

### 2.5.1 Ground Mounting Installation Kits



Ground Mounting Installation Kit



The ground mounting installation kits comes with two stands, four hex bolts and nuts for mounting the stands onto the enclosure. If ordered along with the enclosure, the installation kits are usually mounted onto the battery tray.

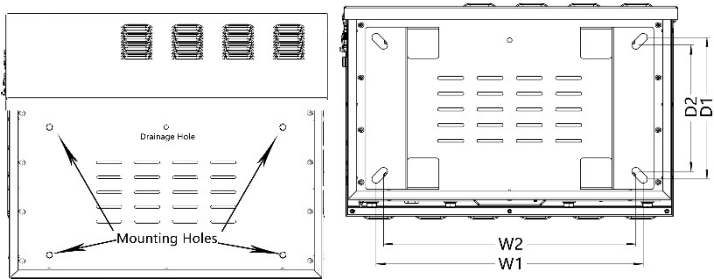
### 2.5.2 Ground Mounting Installation

Tools and materials required and prepared by the users

- ✓ Anchor Bolts: 12mm (1/2") or 16mm (5/8") diameter, 4 sets.
- ✓ Washers: stainless steel, diameter to suit the bolts, 4pcs.
- ✓ Hammer Drill
- ✓ Torque Wrench
- ✓ Hammer
- ✓ Tape Measure

#### Procedures

- 1) Turn the enclosure face up on a soft, non-abrasive surface.
- 2) Locate the installation kits mounting holes.



Ground Mounting Holes

- 3) Install the stands onto the enclosure using bolts and nuts come with the installation kit.
- 4) Drill holes on the ground or the concrete pad (preferred) and install the anchor bolts. Sizes accommodate the enclosure. Sizes in the table below are for reference only.

Enclosures	W1 / W2	D1 / D2
PWE-3	510 / 481 mm (20.1" / 19.0")	270 / 241 mm (10" / 9.5")

Ground Mounting Holes

- 5) Seat the enclosure on the pad.
- 6) Fully tighten the anchor bolts.

## 2.6 UTILITY POWER CONNECTION



### WARNING!

Only skilled person should connect the utility power. Utility power must be connected in compliance with local electrical codes.



### CAUTIONS!

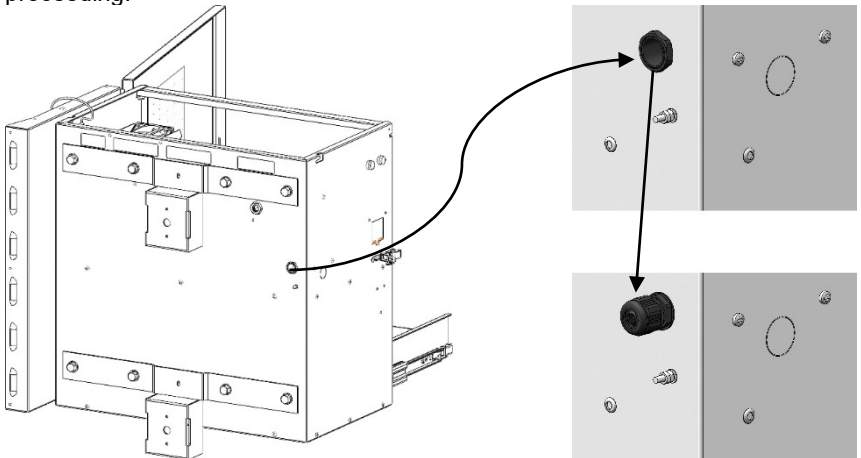
An external service disconnect (UL listed) shall be installed between utility power and the power supply installed inside the enclosure. The disconnect device is provided by the user. Please consult the local supplier, supplier of the service disconnect and your local utility for specific installation instructions and guidelines. All electric codes apply.



### CAUTIONS!

Always verify rated input voltage and operating frequency of the power supply installed inside the enclosure. Fault voltage and / or frequency applied may cause damage to the power supply

Utility power enters the enclosure through a cable gland in the rear of the enclosure. The cable gland was reversely installed to ensure shipping safety. Please turn it over and have the dome cap outside the enclosure before proceeding.



Utility Entrance

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### **2.6.1 Service Receptacle**

The PWE series standby enclosures are supplied with two different electrical receptacles. One from 120VAC power (5-20R) and one for 240VAC power (120 or 240VAC).

#### **120VAC Connections**

When installing the 120VAC receptacle, the ground wire from the service entry cable should be connected to the ground stud. A jumper should also be connected to the neutral busbar and a green insulated jumper wire should be connected to the green ground screw on the 5-20R duplex receptacle.

The white neutral wire from the service entry cable should be connected to the busbar and then a white jumper from the busbar to the silver screw on the duplex receptacle.

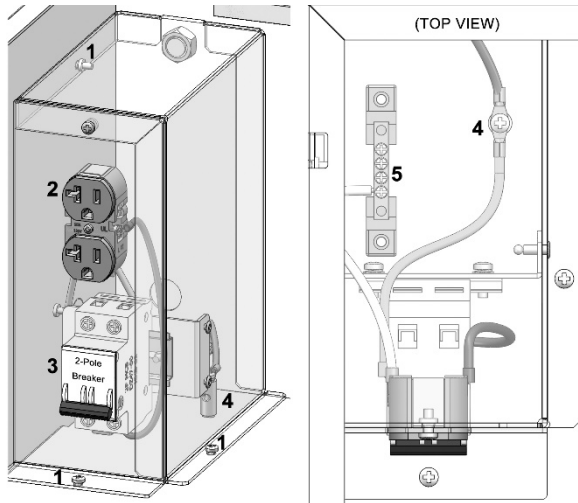
The hot wire from the service entry cable should be connected to the top or entry side of the circuit breaker. Since this is a 120-volt installation only one side of the circuit breaker should be connected. The output side or bottom of the circuit breaker then should be connected to the gold screw terminal of the duplex receptacle.

#### **240VAC Connections**

When installing the 240VAC receptacle, the ground wire from the service entry cable should be connected to the ground stud. A jumper should also be connected to the neutral busbar and a green insulated jumper wire should be connected to the green ground screw on the 6-20R duplex receptacle.

The white neutral wire from the service entry cable (if there is one) should be connected to the busbar (no neutral connection is made to the 6-20 receptacle).

On a 240-volt installation there are two hot wires each on having a 120VAC potential. The hot wires from the service entry cable should be connected to the top or entry side of the circuit breaker using both the top left and right connections. The two output sides or bottom of the circuit breaker then should be connected to the other two gold color screw terminal of the other two gold color screw terminal of the 6-20R receptacle.



### Utility Connection

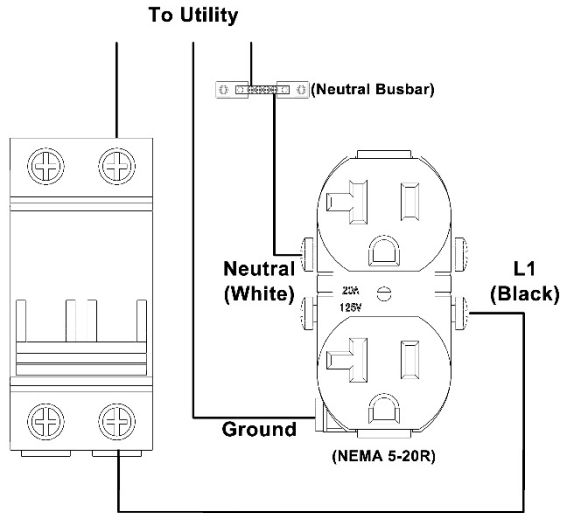
- 1) Bolts mount housing of receptacle.
- 2) Duplex receptacle.
- 3) 2-pole breaker.
- 4) Internal grounding post.
- 5) Neutral busbar.

Wiring of receptacle may vary. Following drawings are for reference only. Wiring of the receptacle shall always comply with local electrical codes. Please contact your local utility to verify that the wiring conforms to applicable codes.

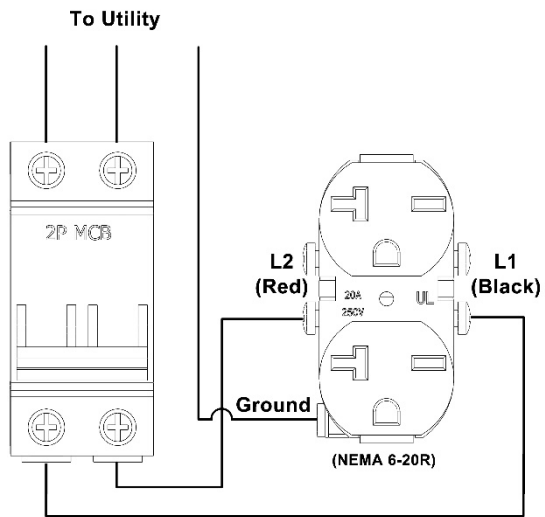


### **WARNING!**

The enclosure must be well earthed. Fail to do so can cause electrical shock.



NEMA 5-20R Wiring



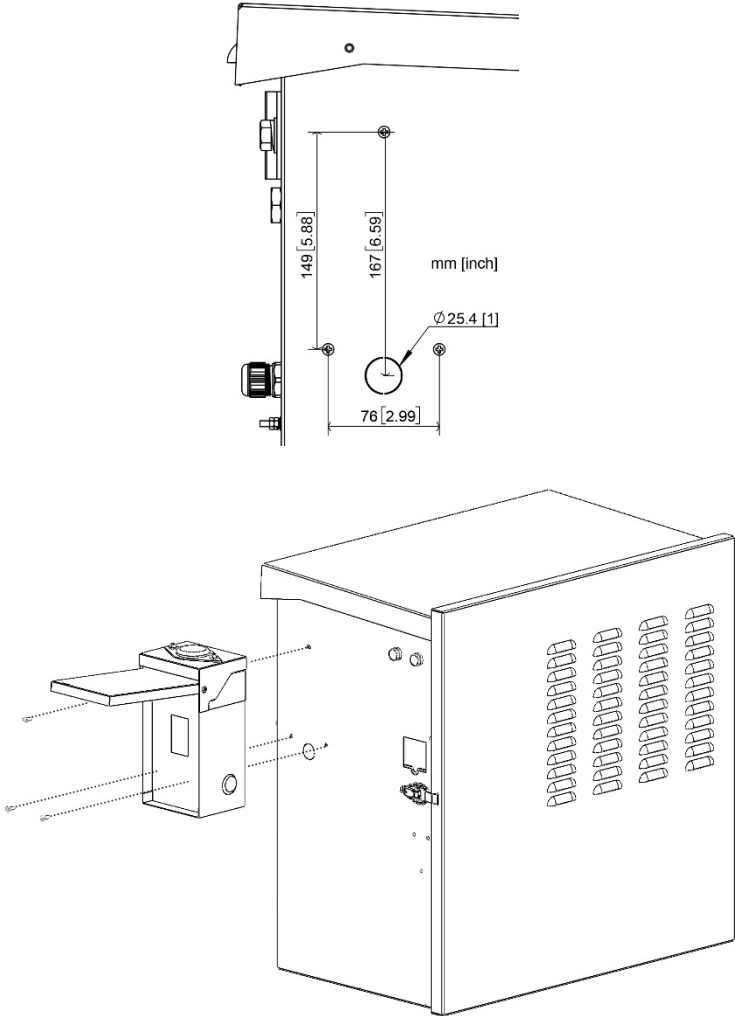
NEMA 6-20R Wiring

It is recommended that the service to the power supply now be turned on and your wiring be tested with a volt-ohm meter to ensure proper construction and voltage.

### 2.6.2 External Service Disconnect

When external service disconnect is required by the application, QO Load center of Square D is recommended. QO2L40RB or QO24L70RB (provided by user) can be installed by three mounting holes on the right of the enclosure.

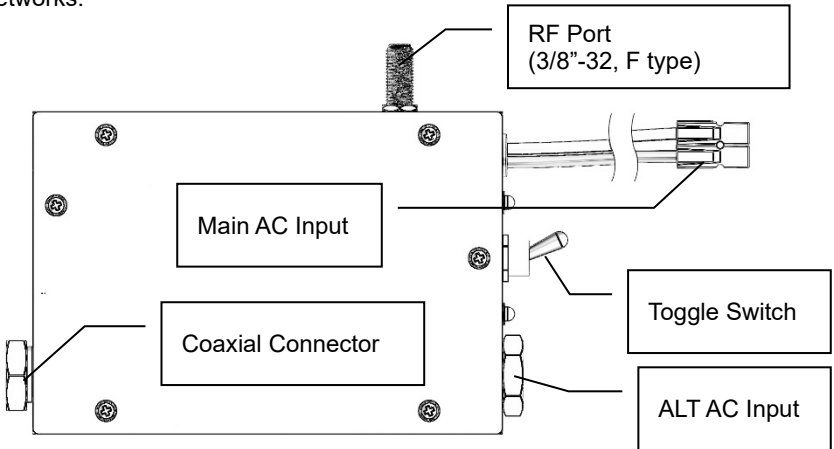
Please contact supplier of the external service disconnect for installation, configuration and wiring.



External Service Disconnect

## 2.7 COAXIAL CABLE CONNECTION

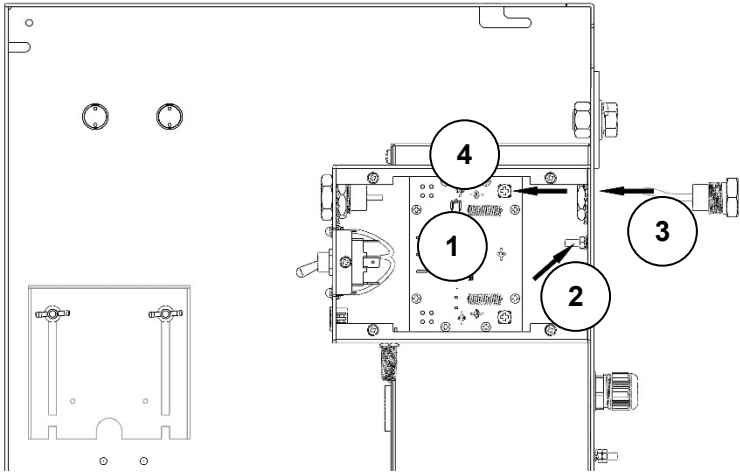
PI-RF series Power Inserter, available as an optional factory-installed feature, provides an easily accessible interface between power supply and coaxial cables that carries power for or signal from the loads in cable and broadband networks.



PI-RF Power Inserter Layout

Component	Description
Coaxial Connector	A 5/8"-24 threaded F type connector is designed to connect to cable networks by coaxial cable (prepared by user).
RF Port	This F type connector is 3/8"-32 threaded. It allows easy network connection to the transponder of power supply. It eliminates the need for a coaxial drop being running into the enclosure from a tap.
Main AC Input	Color-coded connectors that connect to OUTPUT 1 of the power supply.
Toggle Switch	Selects AC input from Main and Alternative. LED indicator beside each AC Input indicates the selection.
ALT AC Input	The alternative AC input is a 5/8"-24 threaded F type connector. It can be used to connect OUTPUT 3 of the power supply or to connect output from a service power supply when the power supply inside the enclosure is under service.

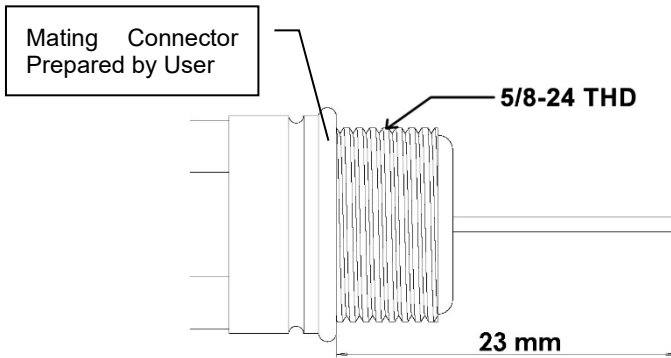
Optional Power Inserter Overview



PI-RF Power Inserter Installation

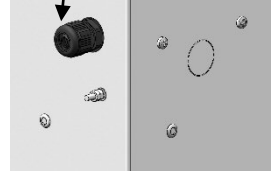
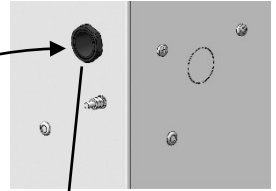
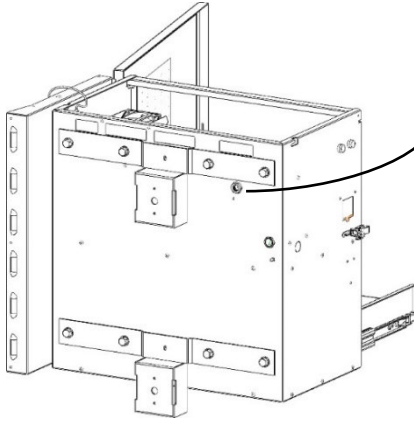
### 2.7.1 Coaxial Cable Preparation

Coaxial termination and ALT AC Input use a 58"-24 threaded F type connector. Prepare the coaxial cable as per length guide given blow.



Coaxial Cable Length Guide





Coaxial Cable Entrance

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## 2.8 BATTERY INSTALLATION



### **WARNING!**

To prevent arcing, never let battery cables / terminals contact with the enclosure. Disconnect all cables from the batteries and wrap the terminals with electrical tape prior to installing the batteries.



### **WARNING!**

Make sure battery breaker of the power supply is at OFF position before proceeding to battery installation.



### **CAUTIONS!**

Voltage of battery string must be in exact accordance with the nominal battery voltage of the power supply. Failing to do so damages the power supply.

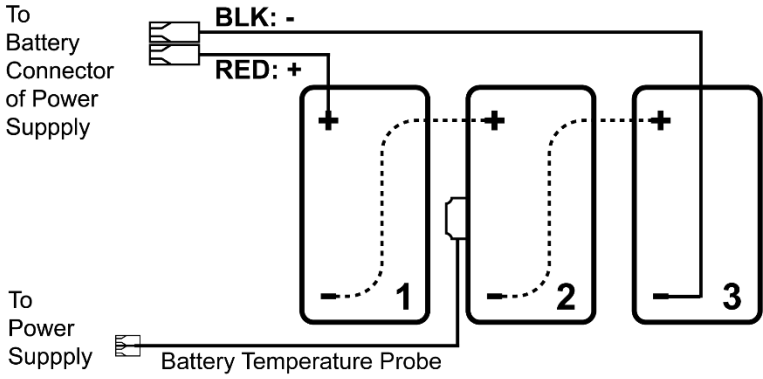


### **CAUTIONS!**

Always verify polarity and voltage of battery and polarity of battery connector whenever connecting battery.

- ✓ Verify battery voltage of power supply and prepare batteries according to expected runtime. Battery voltage (or DC voltage) of the power supply is printed on label of the power supply.
- ✓ Pull out the battery slide tray slowly and properly place batteries onto battery tray one by one.
- ✓ Arrangement of batteries varies between different enclosures. But it's necessary to keep 5-10mm distance between each battery.
- ✓ Place the battery temperature probe (one of features of power supply) on either battery (one in the center is preferred).
- ✓ Verify polarity of batteries and connect batteries in series. Cables, bolts, washers and nuts that interconnect batteries are prepared by user. Interconnection cable kits may be also available as optional features from your supplier. Please contact your supplier for details.
- ✓ Battery cable kits come with the power supply is to connect battery string and the power supply: red wire connects Positive terminal of first battery in the string and black wire connects Negative terminal of last battery.

**2.8.1 PWE-3 Battery Wiring Diagram**



PWE-3 Battery Wiring Diagram

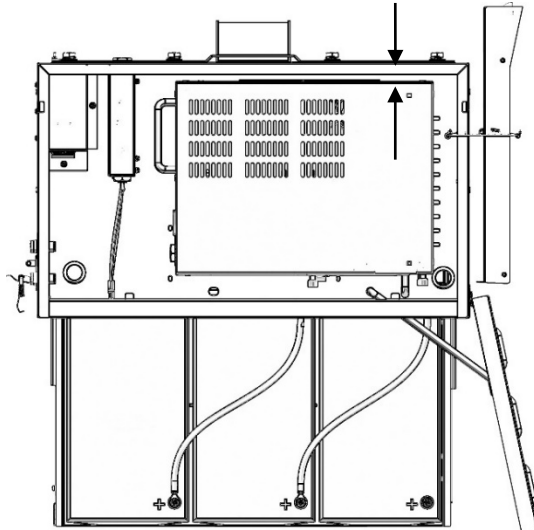
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## 2.9 POWER SUPPLY INSTALLATION

Before proceeding to power supply installation, inspect the power supply for possible damaged or loosened connectors.

Switch battery breaker of the power supply to OFF position. Or, the power supply will be turned on immediately once battery string(s) is connected to the power supply even if utility power is disconnected.

Properly place the power supply on Power Supply Shelf. Keep enough room between rear of the power supply and the enclosure for ventilation.



Power Supply Installation

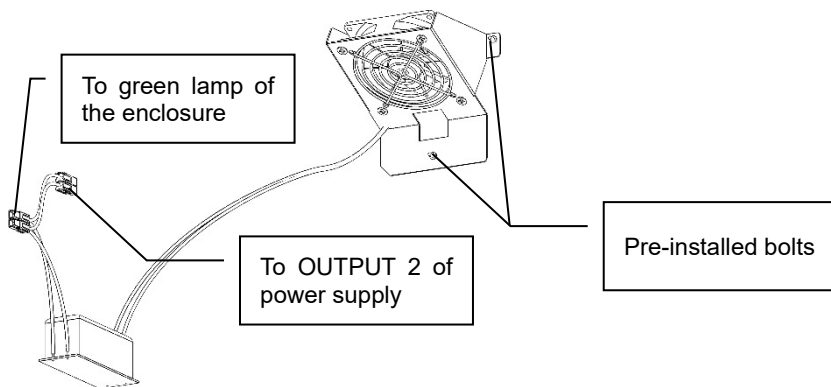
## 2.10 COOLING FAN INSTALLATION

Cooling fan assembly is available as an optional feature of PWE series enclosure. If ordered, the cooling fan assembly shall be well installed inside the enclosure before delivery. Installing the cooling fan assembly in the field requires a Philips screwdriver.



### CAUTIONS!

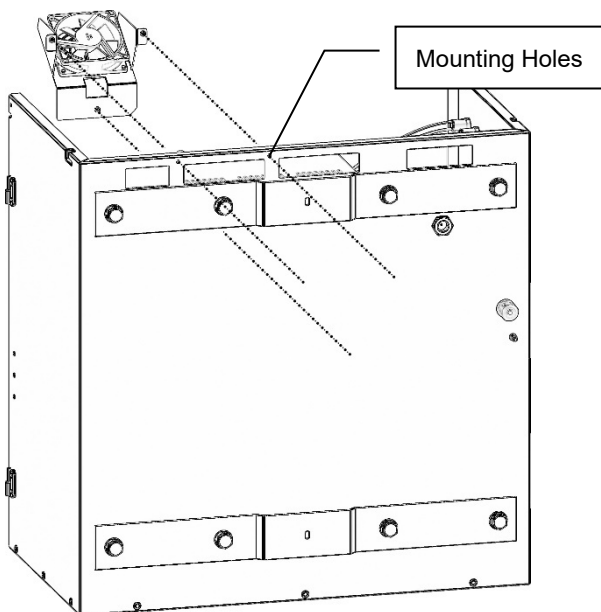
The cooling fan is thermostatically controlled and may start at any time once power is applied. DO NOT connect it to power supply before completing all the installations. Keep figures clear while power is applied.



Cooling Fan Assembly

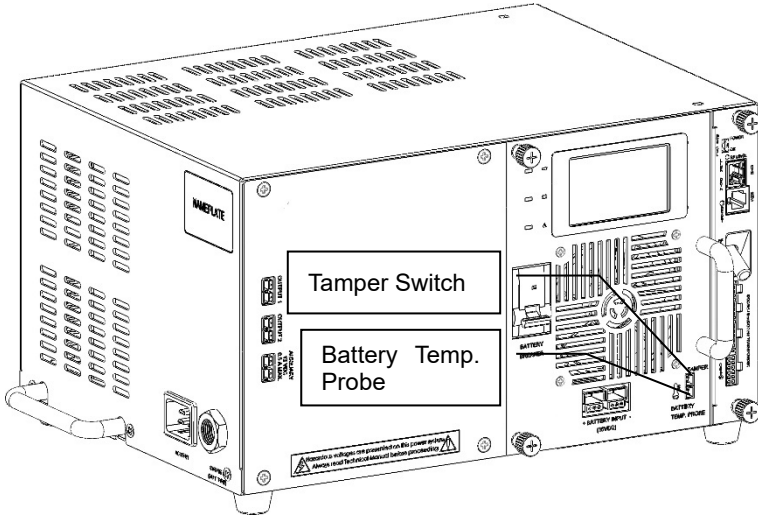
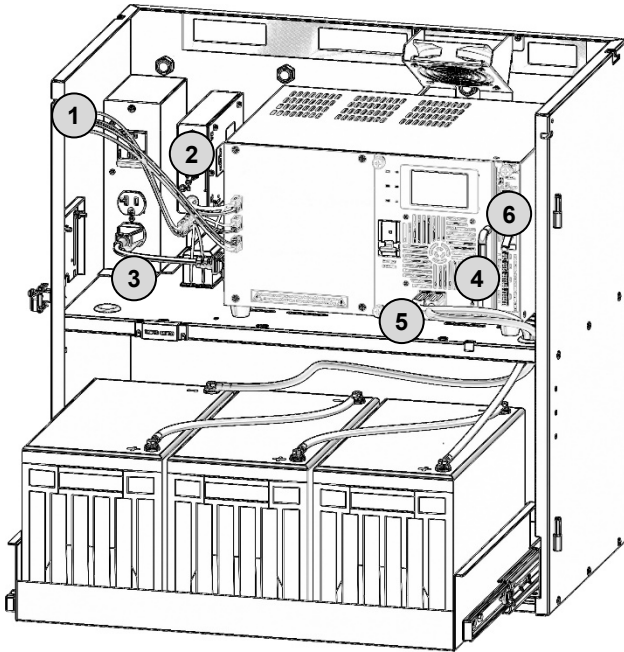
**Procedures**

- 1) Remove bolts and washers (typically 3 sets) come with the cooling fan assembly. DO NOT remove the FOUR screws mounting the fan.
- 2) Place bracket of the fan assembly onto interior rear of the enclosure.
- 3) Fix the cooling fan assembly using bolts and washers onto the enclosure from rear of the enclosure.



Cooling Fan Installation

## 2.11 INTERNAL WIRING



Internal Wiring

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### **2.11.1 Pilot Lamps**

Two durable lamps, installed already before delivery on left of the enclosure, provide visible status monitoring of power supply operation.

- ✓ Connect GREEN lamp to "OUTPUT2" of the power supply.
- ✓ Connect RED lamp to "Auxiliary" of power supply.
- ✓ Connectors of both lamps fit in ONE direction only.

#### **NOTE**

If optional cooling fan is installed, green lamp shall connect to Y cable of cooling fan assembly and another end of Y cable connects to OUTPUT 2 of power supply.

### **2.11.2 Power Inserter**

Connect cables with color-coded connectors to "OUTPUT1" of the power supply. The connector fits in ONE direction only.

### **2.11.3 Service Receptacle**

Connect power supply to service receptacle using the power cord comes with the power supply.

### **2.11.4 Tamper Switch & Battery Temp. Probe**

If optional tamper switch is ordered, it should have been installed inside the enclosure. Plug tamper switch into connector on right hand of power supply marked "TAMPER".

Battery temperature probe is a standard feature of the power supply. Connect it to power supply below the tamper switch connector.

### **2.11.5 Battery String(s)**

Verify again if battery breaker of the power supply is at OFF position. If not, switch it OFF.

Connect battery string(s) with the power supply by plugging connector of battery cable kits to Battery Connection of the power supply. The connectors are color coded and fit in ONE direction only.

### **2.11.6 Transponder Connections**

If transponder is ordered, please refer to installation manual of the transponder for front panel connections, such as battery monitoring and RF port.

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### **3. STARTUP & TEST**

Once connections and configurations are made, startup and test may begin. All loads must be removed before starting test. Follow startup & tests instructions of Technical Manual of the power supply to proceed.

### **4. PREVENTIVE MAINTENANCE**

Preventive Maintenance should be performed regularly for operation safety and expected service life of the equipment. It is recommended to run the maintenance every three to six months.

Except maintenance guidelines contained in Technical Manual of the power supply, service personnel shall also pay attention to the enclosure.

#### **4.1 INSPECT HARDWARE OF ENCLOSURE**

Look for signs of rust and corrosion, paying particular attention to the battery trays. Clean any rust or corrosion immediately.

Carefully inspect the mounting bracket and mounting hardware. Look for signs of unusual wear and loose hardware. Correct all mounting hardware failures immediately.

#### **4.2 CHECK BATTERY TERMINALS AND WIRES**

Care of the batteries is a critical step in any maintenance program. In addition to voltage checks, visually inspect the batteries for signs of cracking, leaking, or swelling.

Check if battery breaker is switched off. If yes, carefully inspect if there is a short between batteries.

#### **NOTE**

If battery breaker is off, or batteries are not installed or not connected to the power supply, backup power is not available in case of utility power outage.







**For technical service, please contact us at:**

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Due to continuing improvements, specifications of the power supply and contents of this document are subject to change without notice.