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### **Sunwize Power Online Ready**

# Quick Start

The purpose of this guide is to assist you in setting up your system quickly and efficiently.

Share your installation photo: email to marketing@sunwizepower.com For technical support call 866-827-6527

## **System Parts List**

Enclosure Enclosure mounting brackets (if required) Batteries and battery cables Control Panel Charger Panel Installation Kit

## You will need these tools:

Wide, medium, and narrow flat head and Phillips screwdrivers Socket driver set and open end wrenches (3/8" - 3/4") 5/32" Allen Wrench 3/16" Allen wrench Tape measure Grease pencil, chalk, scribe, or other marker Digital multi-meter Digital clamp on Amp meter (optional)

#### You will need to supply these parts (not included):

Galvanized steel pole - 2"-8" sch 40 (if required) Load wire - 18-6 AWG Load conduit - 1/2" KO provided Equipment grounding - 14-2 AWG lug provided, ground per local electrical code Chest style only: Battery enclosure anchor bolts - 1/2" dia. (4 per enclosure) UV resistant cable ties



Batteries can explode or severely burn if the terminals are shorted to the opposite polarity. A single point system ground is required per NEC A.690. It is recommended to tie the battery negative (-) terminal to the equipment chassis at the time of installation. Always observe proper polarities when making electrical connections to the batteries and controller.



#### Side of Pole Mount Enclosure

1. Mount upper mounting bracket at desired height of enclosure on the pole using U-bolts or band clamps.

Install the lower mounting bracket, Spacing should be measured from the upper bracket as follows:	
Model	Xinches/mm
WF2 or WF4 battery enclosure	<b>23</b> /584.2
F1 or F2 battery enclosure	<b>12.7</b> /327
F4 battery enclosure	<b>24.1</b> /612
F4 (tall) battery enclosure	<b>39.1</b> /993.14

2. Hang top of enclosure on top bracket - slip the tabs on either end of the mounting bracket under the tabs on the top of the back of the enclosure.

3. Attached lower bracket to enclosure using the round carriage bolts.





#### **Ground Mounted Enclosure**

1. Install the base mounting pads at the desired location using 1/2 inch concrete fastening hardware. Refer to the chart for dimensions and the diagram for enclosure mounting hole locations.

2. Check alignment and tighten bolts.







## 2 Control Panel Installation

#### Side of Pole Mount Enclosure

- 1. Remove second set of supplied nuts from mounting studs located on the side wall of the enclosure
- 2. Adjust first set of nuts on each stud to the same distance from enclosure wall leaving enough stud exposed for control panel and second nuts.
- 3. Install control panel and second set of nuts as shown below.
- 4. Mount the charger panel to the side studs of the enclosure using the same procedure.
- 5. Verify all breakers are in the OFF (open) position.
- 6. Ground the control panel to the enclosure (see grounding below).
- 7. Install Batteries in enclosure (Do not connect wires yet).



#### Grounding

#### Set all circuit breakers in enclosure to OFF (open)

Install ground kit (provided) per figure below. Use wire rated for outdoor use per local codes and size per NEC A.690 for system earth grounding. Verify system neutral bonding is per local code.





#### **Battery Wiring**

#### For 12V systems

Each 12V battery is in parallel with the next. Connect the RED jumper from BAT 1 POSITIVE (+) terminal to the BAT 2 POSITIVE (+) terminal and the BLK jumper from BAT 1 NEGATIVE (-) terminal to the BAT 2 NEGATIVE (-) terminal. Repeat this pattern for each battery.

#### For 24V systems

Each pair of 12V batteries are in series and form one string. Connect the BLK jumper from BAT 1 NEGATIVE (-) terminal to the BAT 2 POSITIVE (+) terminal. Repeat this pattern for each series string.

Each series string must be connected in parallel to complete the bank wiring. Connect the RED jumper from BAT 1 POSITIVE (+) terminal to the BAT 3 POSITIVE (+) terminal, and the BLK jumper from BAT 2 NEGATIVE (-) terminal to the BAT 4 NEGATIVE (-) terminal. Repeat this pattern for each parallel pair.

#### For 48V systems

Each quadruple set of 12V batteries are in series and form one string. Connect the BLK jumper from BAT 1 NEGATIVE (-) terminal to the BAT 2 POSITIVE (+) terminal, BAT 2 NEGATIVE (-) terminal to the BAT 3 POSITIVE (+) terminal, BAT 3 NEGATIVE (-) terminal to the BAT 4 POSITIVE (+) terminal.

Each series string must be connected in parallel to complete the bank wiring. Connect the RED jumper from BAT 1 POSITIVE (+) terminal to the BAT 5 POSITIVE (+) terminal and the BLK jumper from BAT 4 NEGATIVE (-) terminal to the BAT 8 NEGATIVE (-) terminal. Repeat this pattern for each parallel pair.

#### **Final Connection**

Inside the control/battery enclosure, connect the controller and charger RED BAT (+) wires to the battery bank POSITIVE (+) terminal. Connect the controller and charger BLK BAT (-) wires to the battery bank NEGATIVE (-) terminal.

Connect the charger temperature sensor to any BAT (-) terminal.

#### **AC Wiring**

To hook AC power to the system an AC power source will need to be hooked up to the charger panel.

Run the Hot wire (L1) to the bottom of the AC breaker (CB1). Run the Neutral wire (N) to the white terminal block. Run the Ground wire (GND) to the green terminal block.



24 VDC



48 VDC







Confirm all connections, fittings, and fasteners are secure.

**Measure Voltages** (Confirm all breakers are off before measuring)

Verify the battery polarity is positive. If negative, reverse wiring to the system and check again.

**Measure battery voltage** from either the BAT(+) terminal block to the BAT(-) terminal block or the BANK(+) to the BANK(-) to verify that they are approximately:

12V systems	12-13V
24V systems	24-26V
48V systems	48-52V



#### Set breakers to the ON (closed) position

#### On the load control panel

1. Set the BAT (+) CB1 input breaker 2. Set the LOAD (+) CB2 output breaker

#### On the charger control panel

1. Set the BAT (+) CB2 output breaker 2. Set the AC In (L1) CB1 input breaker

Confirm that the controller status LEDs function properly.

On the charge control panel, measure the voltage from the LOAD(+) terminals to the LOAD(-) terminals which should be the same as the battery voltage.





- 1. Turn the Power Online System OFF.
  - A. On the Charger panel turn the AC (CB1) OFF
  - B. Turn the Battery breaker (CB2) OFF
  - C. On the Load panel turn the Battery breaker (CB1) OFF
  - D. Turn the Load breaker (CB2) OFF
  - E. Connect your equipment to the terminal blocks on the control panel.
- 2. Turn the Power Ready System ON.
  - A. On the Charger panel turn the Battery breaker (CB2) ON
  - B. Turn the AC breaker (CB1) ON
  - C. On the Load panel turn Battery breaker (CB1) ON
  - D. Turn the Load breaker (CB2) ON
  - E. Confirm the Power Online System is providing power to the load.