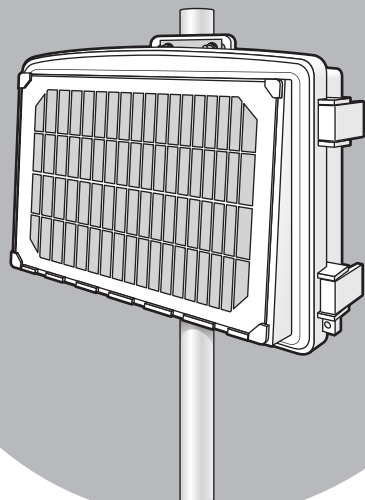


# USER MANUAL

## Solar Power Kits



Solar Power Kit, #6614 &  
Heavy Duty Solar Power Kit, #6612

**DAVIS** ®

Davis Instruments, 3465 Diablo Avenue, Hayward, CA 94545-2778 U.S.A. • 510-732-9229 • [www.davisnet.com](http://www.davisnet.com)



# Welcome to

## Solar Power Kit &

### Heavy Duty Solar Power Kit (6614 & 6612)

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The Solar Power Kit and the Heavy Duty Solar Power Kit allow you to power and shelter your Vantage Pro2 or Vantage Vue console, or your Weather Envoy or Envoy8X for remote or field installations. The kits consist of three key elements: a solar panel, a battery, and a regulator circuit; in a protective housing in which the console or Envoy can be mounted.

The Solar Power Kit (product number 6614) comes with a 1.4 Ah battery. This battery is sufficient, in most cases, to power wireless Vantage Pro2 consoles, Vantage Vue consoles, and wireless Weather Envoys. (The wireless outdoor sensor suite is powered separately by the sensor suite's solar panel.) It includes a 5 watt solar panel.

The Heavy Duty Solar Power Kit (product number 6612) comes with a 12Ah battery. It is required to power cabled consoles, cabled Weather Envoy, and Envoy8X, or wherever extra power is needed. It includes a 5 watt solar panel.

In low light or poor conditions, you may need the Heavy Duty Solar Power Kit to power wireless consoles or Envoys.

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**Note:** Your Solar Power Kit comes with a battery designed to charge in temperatures as low as -20°C. If your installation is in a location with low temperatures, you should replace the battery with a Davis battery:

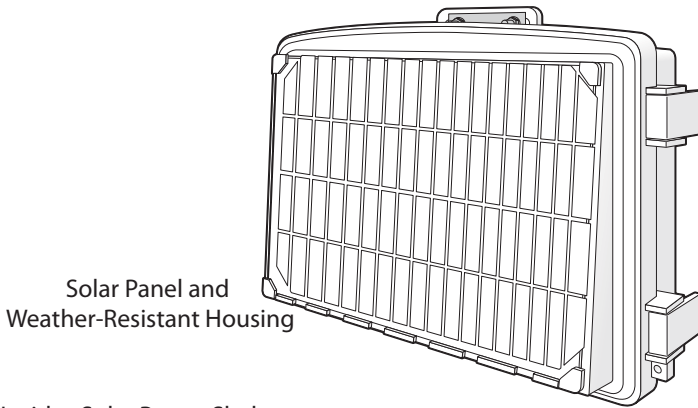
12 Amp. Hr. battery: product number 7011.025

1.4 Amp. Hr. battery: product number 7011.005

If your installation is in a warmer climate, you may replace the 12 Amp. Hr. battery with a 6-volt, 12 Ah, gel cell battery (standard motorcycle battery). You may replace the 1.4 Amp. Hr. battery with a 6-volt, 1.4 Ah, gel cell battery. These batteries will only charge at temperatures above 0°C. (With either battery, your Solar Power Kit can function down to -40°C.)

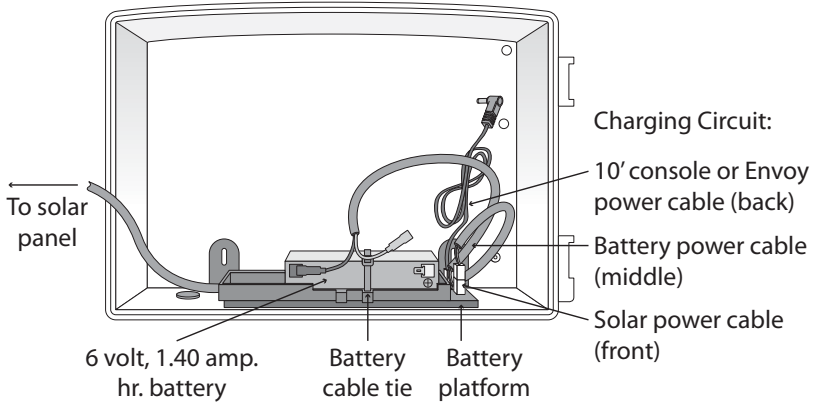
---

# Contents of Package



Solar Panel and Weather-Resistant Housing

Inside: Solar Power Shelter



To solar panel

6 volt, 1.40 hr. battery

Battery cable tie

Battery platform

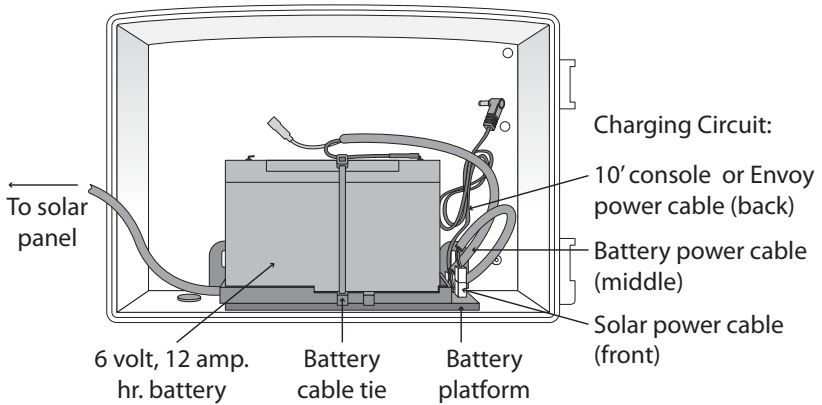
Charging Circuit:

10' console or Envoy power cable (back)

Battery power cable (middle)

Solar power cable (front)

Inside: Heavy Duty Solar Power Kit



To solar panel

6 volt, 12 amp. hr. battery

Battery cable tie

Battery platform

Charging Circuit:

10' console or Envoy power cable (back)

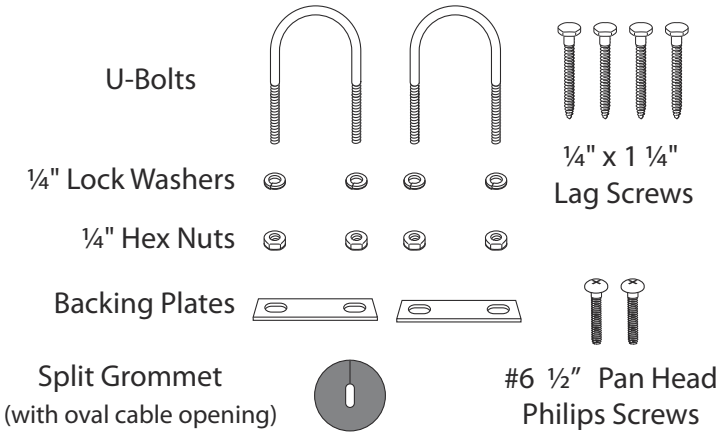
Battery power cable (middle)

Solar power cable (front)

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The package contains the following:

- Weather-proof shelter with solar panel
- Hardware kit (as shown)



### Tools for Setup

- Phillips head screwdriver
- Adjustable wrench or 7/16" wrench
- Drill and 3/16" (5 mm) drill bit (if mounting on a vertical surface)

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# Mounting Consoles in the Solar Power Kit (1.4 Ah battery, #6614)

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Note: You may mount the shelter before installing the console or Envoy. However, it may be easier to do this at a workbench rather than in the field. In the case of an Envoy, you will need a PC to set up the Envoy after you power it up.

---

The shelter has been designed to fit Davis consoles and Envoy's. Inside the shelter, outlines of the Vantage Pro2 console, Vantage Vue console, and Envoy will indicate where they will be mounted in the shelter.

Inside the Solar Power Kit you may install:

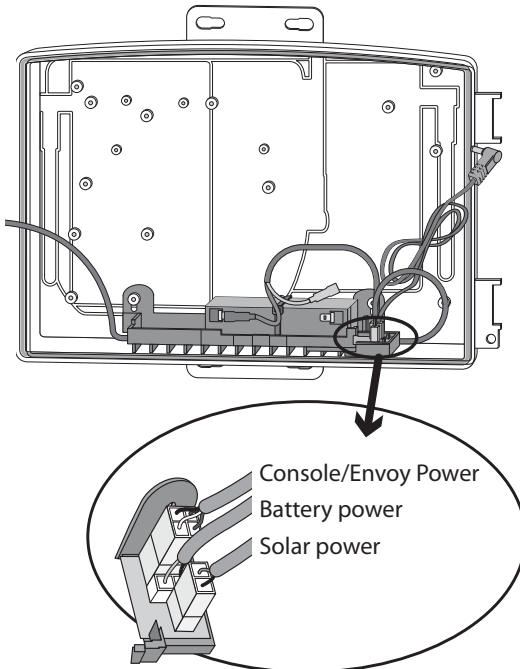
- A wireless Vantage Pro2 console
  - A Vantage Vue console
  - A wireless Weather Envoy
- 

Note: Use the Heavy Duty Solar Power Kit (#6612) to power a cabled Vantage Pro2, a cabled Weather Envoy, or an Envoy8X.

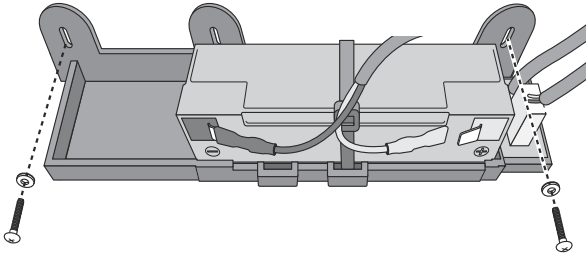
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## Mounting a Wireless Vantage Pro2 Console in the Solar Power Kit

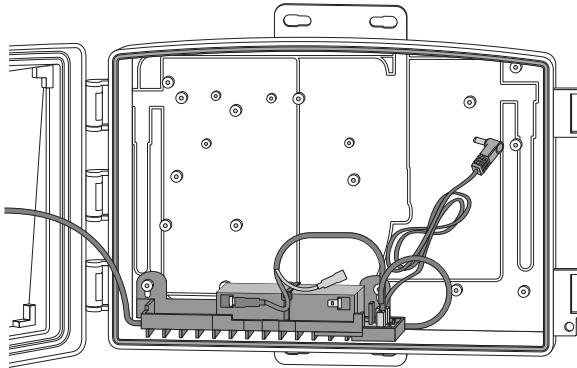
1. Remove all packaging material.
2. Unplug the power cable from the jack closest to the back on the charging circuit.



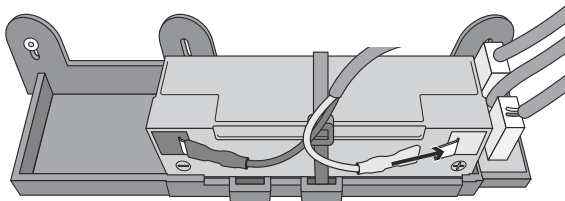
- 
3. In order for the Vantage Pro2 console to fit in the shelter, you must move the battery platform.  
Remove the two screws and washers holding the battery platform in place.



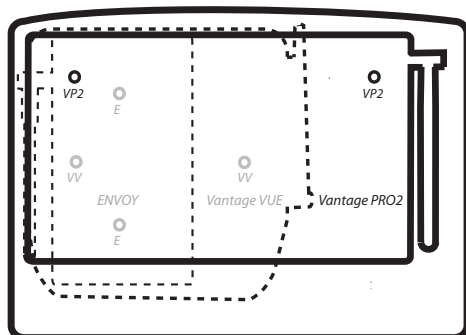
4. Move it to the **left** side (as you face the shelter). Making sure the tray is flush with the bottom, reinsert and tighten the screws.



5. Plug the console power cable back into the jack. (It fits only one way, with the latch in back.)
6. The battery comes shipped with the positive cable unconnected to prevent battery drain. Connect the positive (red) cable to the positive (red) terminal on the battery.



- 
7. On the back wall of the shelter, look for the embossed outline of a Vantage Pro2 console and the screw holes marked “VP2.”



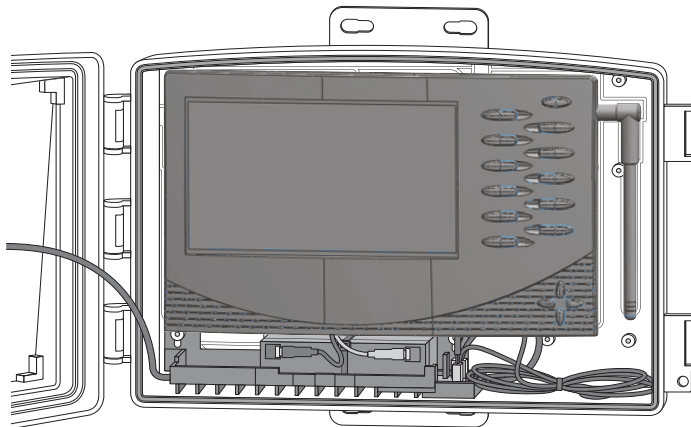
8. Insert the two 1/2" #6 screws into the marked holes. The depth of the hole has been specifically designed so that the screw will “bottom out” at the correct depth. Do not overtighten.

---

Note: You may need to adjust the screw height for proper fit.

---

9. Point the console’s antenna down and push the kickstand back to its locked position. Guide the two keyholes on the back of the console over the two screws and pull the console downward to lock in place. (The solar power cable will fit behind the console.)



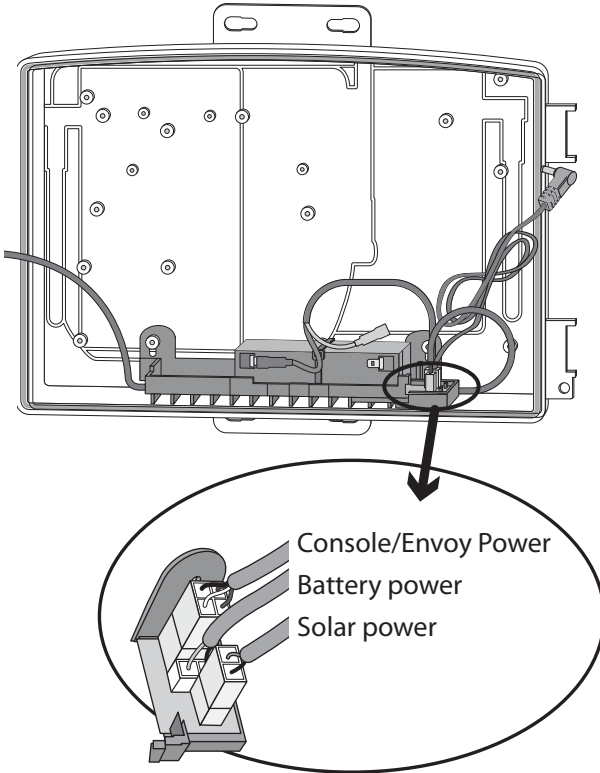
10. Plug the console power cable into the console. Follow the console setup procedures in your *Vantage Pro2 Console Manual*.
11. Close and lock the shelter.



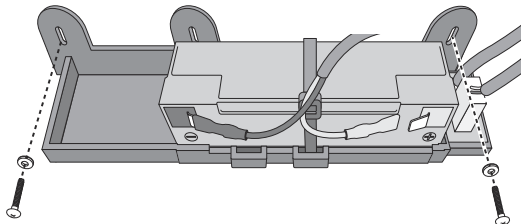
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## Mounting a Vantage Vue console in the Solar Power Kit

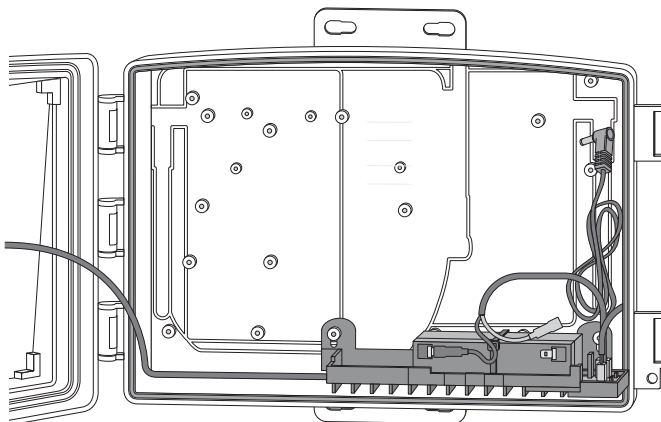
1. Remove all packaging material.
2. Unplug the power cable from the jack closest to the back on the charging circuit.



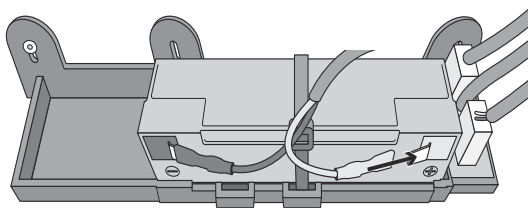
- 
3. In order for the Vantage Vue console to fit in the shelter, you must move the battery platform.  
Remove the two screws and washers holding the battery platform in place.



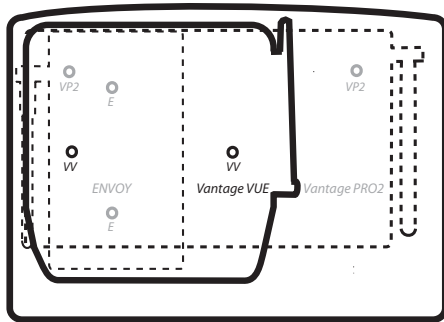
4. Move it to the **right** side (as you face the shelter). Making sure the tray is flush with the bottom, reinsert and tighten the screws.



5. Plug the console power cable back into the jack. (It fits only one way, with the latch in back.)
6. The battery comes shipped with the positive cable unconnected to prevent battery drain. Connect the positive (red) cable to the positive (red) terminal on the battery.



- 
7. On the back wall of the shelter, look for the embossed outline of a Vantage Vue console and the screw holes marked “VV.”



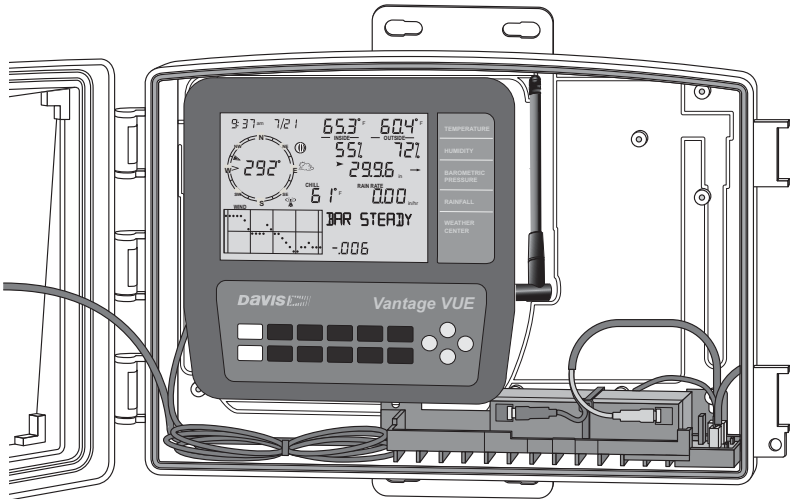
8. Insert the two ½" #6 screws into the marked holes. The depth of the hole has been specifically designed so that the screw will “bottom out” at the correct depth. Do not overtighten.

---

Note: You may need to adjust the screw height for proper fit.

---

9. Remove the kickstand from the console. Guide the two keyholes on the back of the console over the two screws and pull the console downward to lock in place.



10. Plug the console power cable into the console. Follow the console setup procedures in your *Vantage Vue Console Manual*.
11. Close and lock the shelter.

---

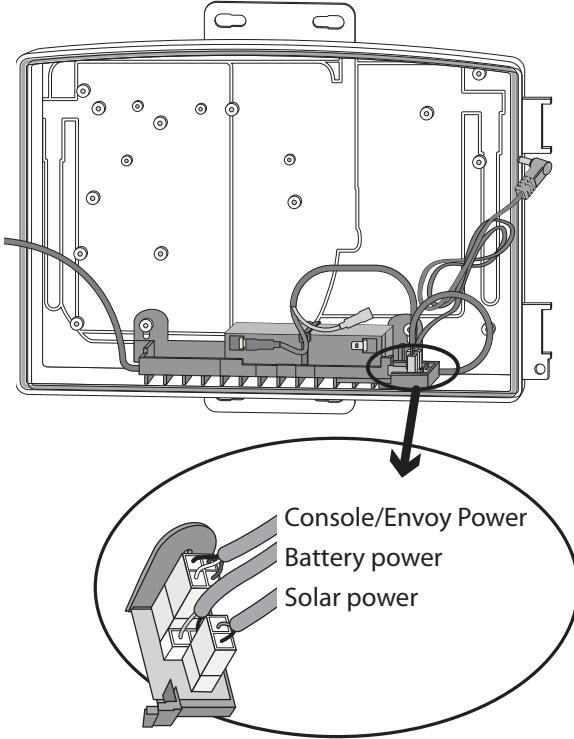
## Mounting a Wireless Weather Envoy in the Solar Power Kit

---

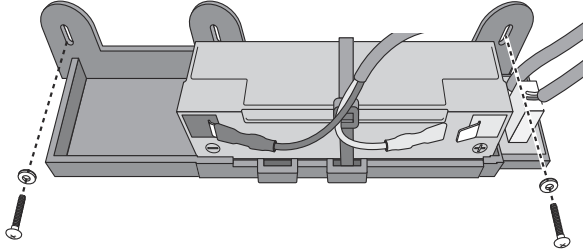
Note: You will need your PC to setup the Envoy after you power it up.

---

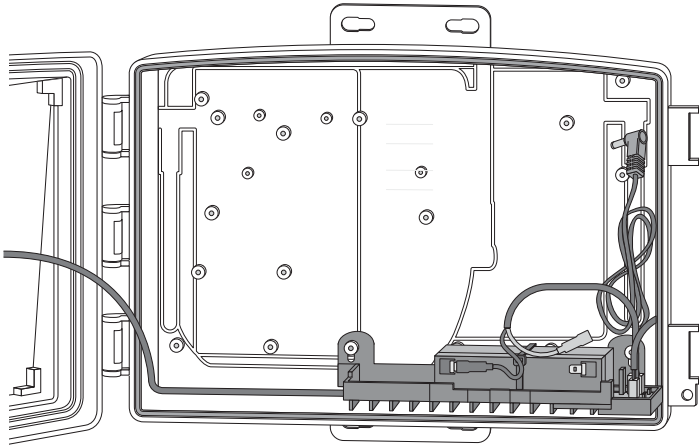
1. Remove all packaging material.
2. Unplug the power cable from the jack closest to the back on the charging circuit.



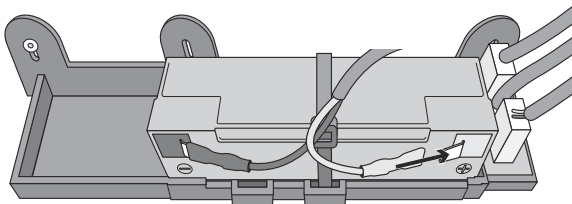
- 
3. In order for the Envoy to fit in the shelter, you must move the battery platform. Remove the two screws and washers holding the battery platform in place.



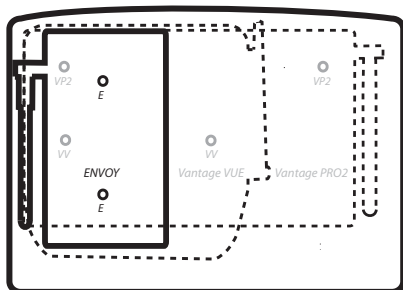
4. Move it to the **right** side (as you face the shelter). Making sure the tray is flush with the bottom, reinsert and tighten the screws.



5. Plug the power cable back into the jack. (It fits only one way, with the latch in back.)
6. The battery comes shipped with the positive cable disconnected to prevent battery drain. Connect the positive (red) cable to the positive (red) terminal on the battery.



- 
7. On the back wall of the shelter, look for the embossed outline of an Envoy and the screw holes marked “E”



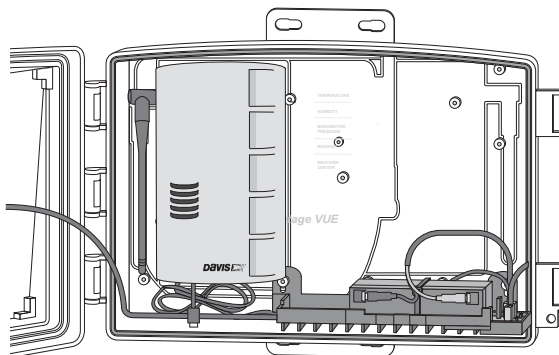
8. Insert the two 1/2" #6 screws into the marked holes. The depth of the hole has been specifically designed so that the screw will “bottom out” at the correct depth. Do not overtighten.

---

Note: You may need to adjust the screw height for proper fit.

---

9. Point the Envoy’s antenna downward. Guide the two keyholes on the back of the Envoy over the two screws and pull the console downward to lock in place.



10. Plug the power cable into the Envoy. Use your PC to set up the Envoy as shown in your *Weather Envoy Manual*.
11. Close and lock the shelter.

---

# Mounting an Envoy in the Heavy Duty Solar Power Kit (12 Ah battery, #6612)

Inside the Heavy Duty Solar Power Kit shelter, you may install:

- An Envoy8X
- A cabled Weather Envoy
- A wireless Weather Envoy where low light or poor conditions require extra power.

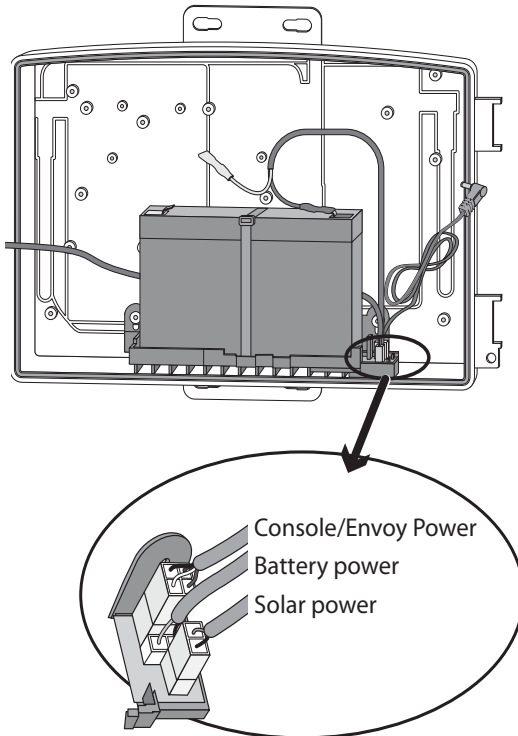
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Note: If using the Heavy Duty Solar Power Kit to power a **cabled Vantage Pro2 console**, or a wireless Vantage Pro2 or Vantage Vue console that requires extra power, you will need to install the console in a Universal Shelter (product number 6618) and connect it to the Heavy Duty Solar Power Kit. See Using the Solar Power Kit or Heavy Duty Solar Power Kit with a Universal Shelter (page 17).

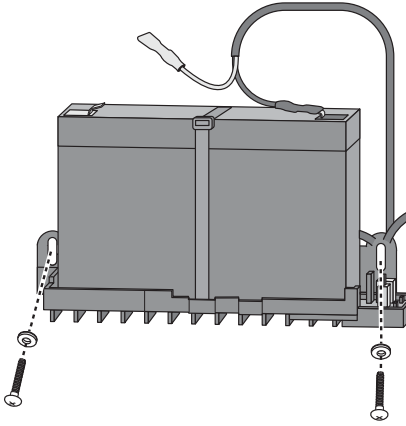
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## Mounting an Envoy8X (or Weather Envoy) in a Heavy Duty Solar Power Kit

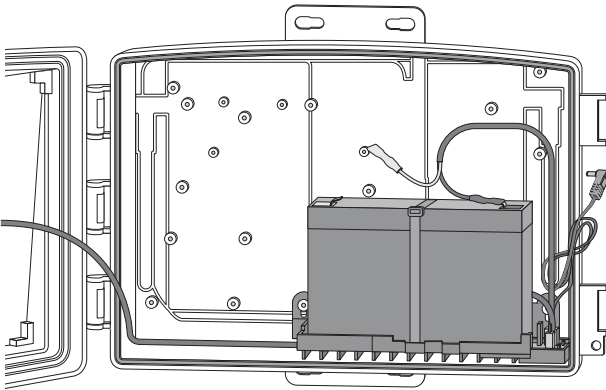
1. Remove all packaging material. (Don't forget the cardboard behind the battery.)
2. Unplug the power cable from the jack closest to the back on the charging circuit.



- 
3. In order for the Envoy to fit in the shelter, you must move the battery platform.
- Remove the two screws and washers holding the battery platform in place.

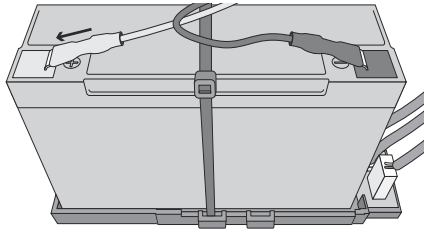


4. Move it to the **right** side (as you face the shelter). Making sure the tray is flush with the bottom, reinsert and tighten the screws.

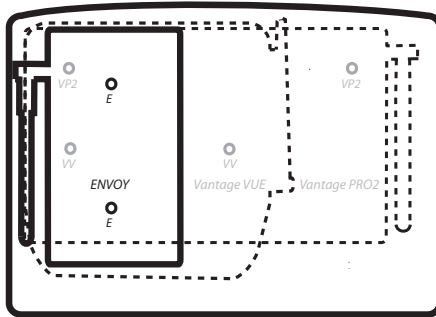




- 
5. Plug the console power cable back into the jack. (It fits only one way, with the latch in back.)
  6. The battery comes shipped with the positive cable disconnected to prevent battery drain. Connect the positive (red) cable to the positive (red) terminal on the battery.



7. On the back wall of the shelter, look for the embossed outline of an Envoy and the screw holes marked “E”



8. Insert the two ½" #6 screws into the marked holes. The depth of the hole has been specifically designed so that the screw will “bottom out” at the correct depth. Do not overtighten.

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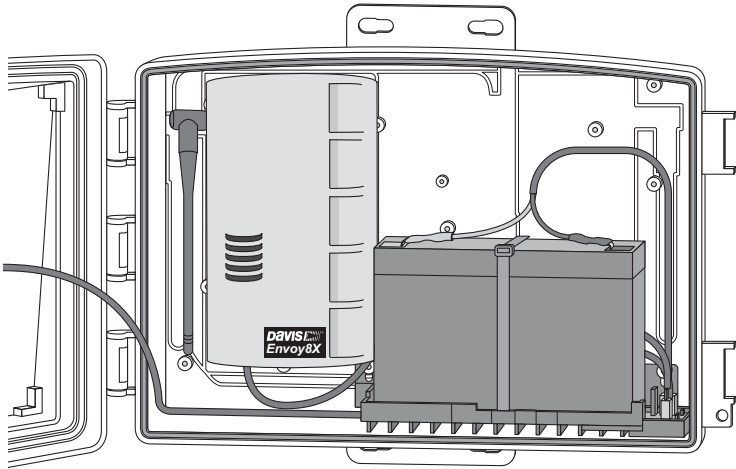
Note: You may need to adjust the screw height for proper fit.

---

9. If you are mounting an Envoy8X or a wireless Weather Envoy, point the Envoy’s antenna downward. If using a Weather Envoy, insert the data logger into the Envoy. Guide the two keyholes on the back of the Envoy over the two screws and pull the console downward to lock in place

---

10. Plug the main power cable into the Envoy.



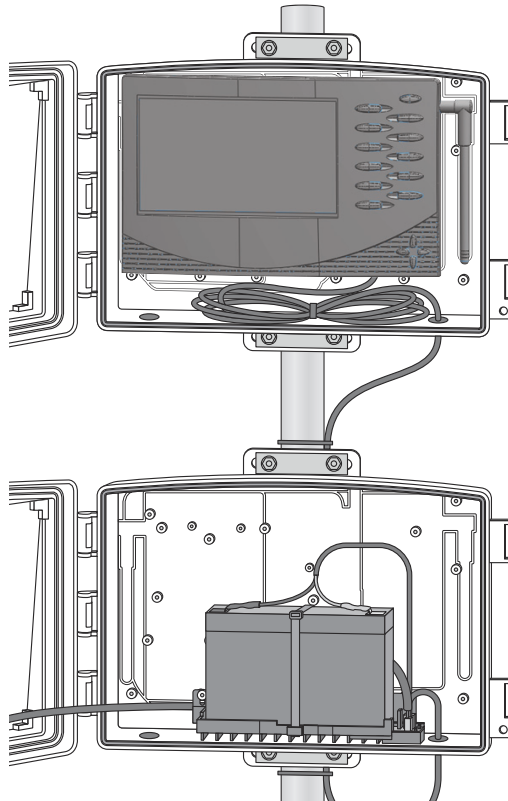
11. If you are mounting a cabled Weather Envoy, remove the rubber plug from the hole on the floor of the shelter, under the Envoy. Wrap the oval-hole split grommet around the Envoy's ISS cable and feed the cable up through the hole, inserting grommet snugly into the hole. Plug the ISS cable into the Envoy.
12. Use your PC to set up the Envoy as shown in your *Weather Envoy* or *Envoy8X* manual.
13. Close and lock the shelter.

---

## Using the Solar Power Kit or Heavy Duty Solar Power Kit with a Universal Shelter

For some installations, you will need both a Solar Power Kit or Heavy Duty Solar Power Kit and a Universal Shelter. For example, if you wish to power to a cabled Vantage Pro2, you will need the Heavy Duty Solar Power Kit with the 12 Ah battery. However, there is not enough room in the shelter for both the large battery and the console. You will need to mount your console in a Universal Shelter and connect it to the Heavy Duty Solar Power Kit.

See your *Universal Shelter User Manual* for more information. It is also available online at [www.davisnet.com/support](http://www.davisnet.com/support).



## Using the Solar Power Kit or Heavy Duty Solar Power Kit with an Extra Solar Panel Kit

For longer battery life in areas where there are extended periods of low or no light, you may link your solar power kit's shelter to an Extra Solar Panel Kit (product number 6616). See your *Extra Solar Panel Kit User Manual* for more information. It is also available online at [www.davisnet.com/support](http://www.davisnet.com/support).

---

## Mounting the Shelter

Choose a location for your shelter. It can be mounted on a pole or a flat surface such as a wall or a wooden post.

It is important that the shelter be mounted so that the solar panel gets the greatest amount of sunshine: the solar panel should be facing south (in the northern hemisphere) or north (in the southern hemisphere).

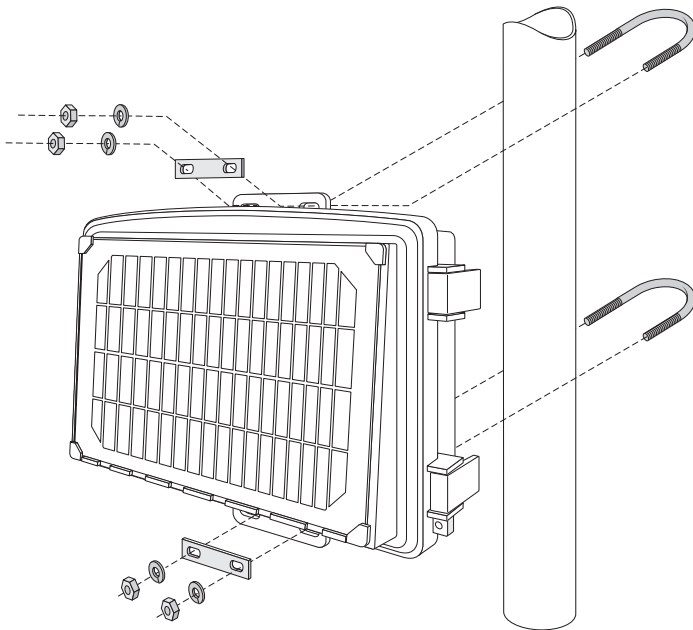
### Mounting on a Pole

Mount the shelter onto a pipe with an outside diameter of 0.84" to 1.84" (21 mm to 27 mm) using the U-bolts, backing plates, washers, and hex nuts provided.

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Note: For mounting on larger diameter pipes, the housing can accommodate U-bolts with 5/6" (8 mm) threads for pipes up to 2.40" (61 mm) outside diameter (not provided).

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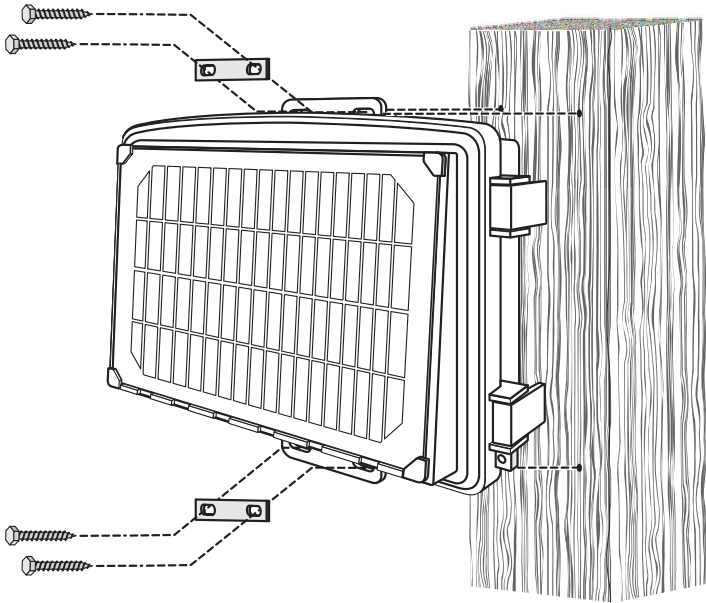


1. While holding the shelter against the pole, place a U-bolt around the pole and through the two holes at the top of the shelter.
2. Place a mounting plate over the bolt ends, then place a lock washer and a hex nut on each of the bolt ends.
3. Tighten the nuts using an adjustable wrench or 7/16" wrench.
4. Place the second U-bolt around the pole and through the two holes at the bottom of the shelter. Put a backing plate, lock washer, and a hex nut on each bolt end, and tighten the hex nuts.

---

## Mounting on a Post or Flat Surface

Attach the shelter to the mounting surface in the desired location using the large screws, 1/4" flat washers, and backing plates as shown below. Use a pencil or a center-punch to mark the location of the pilot hole.

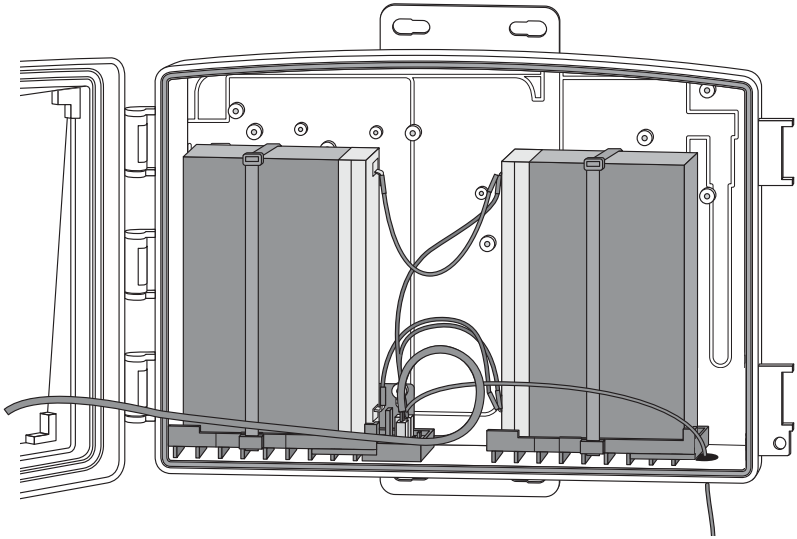


1. With a 3/16" (5 mm) drill bit, drill two holes approximately 2" (50 mm) apart. Use a carpenter's level to ensure the holes will be level.
2. Drill two more holes 7-1/32" below the upper holes.
3. Insert the 1/4" x 1-1/2" lag screws through the backing plate and the holes at the top of the shelter into the post.
4. Using an adjustable wrench or 7/16" wrench, tighten the lag screws.
5. Repeat steps 3 and 4 for the bottom of shelter.

---

# Appendix A: Using the Heavy Duty Solar Power Kit with two batteries

You may add even more power to your devices by mounting two batteries in your Heavy Duty Solar Power Kit, and running that power to a console installed in a Universal Shelter. Please contact Davis Technical Support for materials and instructions.



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## Contacting Davis Technical Support

For questions about installing or operating your Solar Power Kit, please contact Davis Technical Support. We'll be glad to help.

**Online**      **[www.davisnet.com](http://www.davisnet.com)**

See the Weather Support section for copies of user manuals, product specifications, application notes, software updates, and more.

**E-mail**      **[support@davisnet.com](mailto:support@davisnet.com)**

**Telephone**    (510) 732-7814

Monday - Friday, 7:00 a.m. - 5:30 p.m. Pacific Time.

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Note: Please do not return your unit for repair without prior authorization.

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# Specifications

Operating Temperature. . . . . -40° to +149°F; -40° to +65°C  
Battery Charging Temp. Range . . . . . -4° to +122°F; -20° to +50°C  
Housing Material . . . . . Rugged ASA Plastic  
Dimensions (width x length x height) . . 13.75 X 10 X 4.15 inches;  
34.9 X 25.4 X 10.5 cm

## Weight

6614 . . . . . 4.58 lbs.; 2.08 kg  
6612 . . . . . 7.65 lbs.; 3.47 kg

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## Solar Power Kits

Product Numbers 6614 (1.4 Ah battery) and 6612 (12 Ah battery)

Document Number: 07395.326 Rev. A, February 6, 2013

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