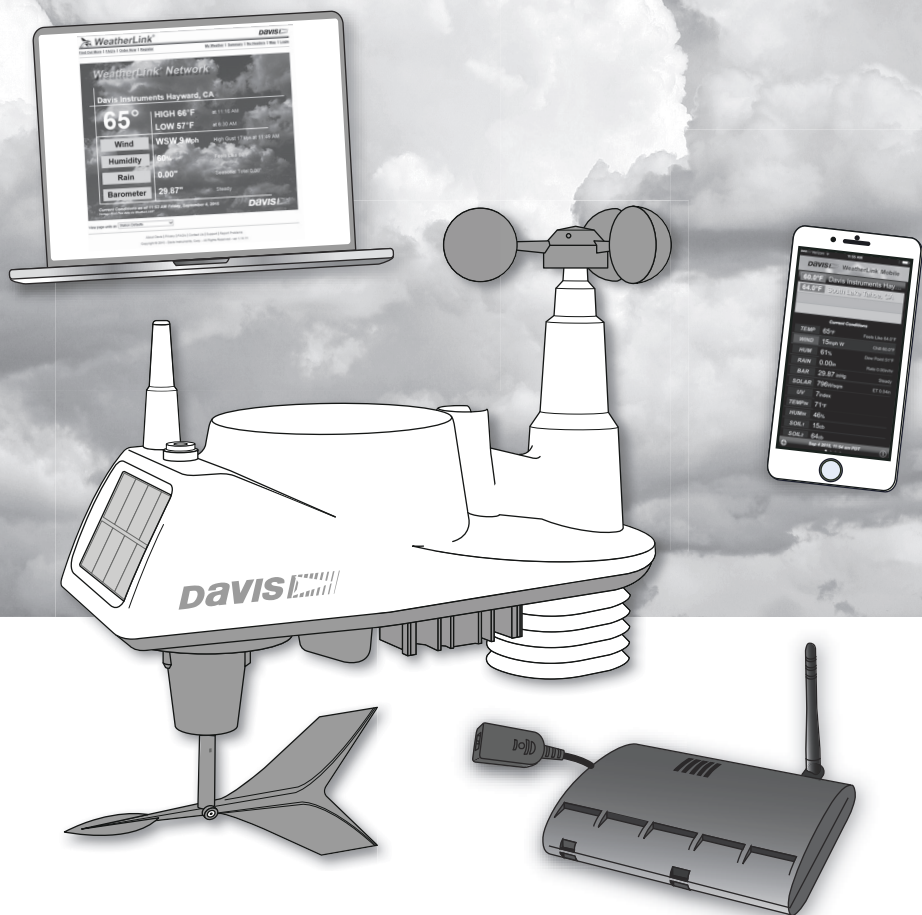




Weather Box

- **Vantage VUE[®]** Sensor Suite
- **Weather Envoy[™]**
- **WeatherLinkIP[™]**

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510.732.9229 • www.davisnet.com

DAVIS 
Davis Instruments

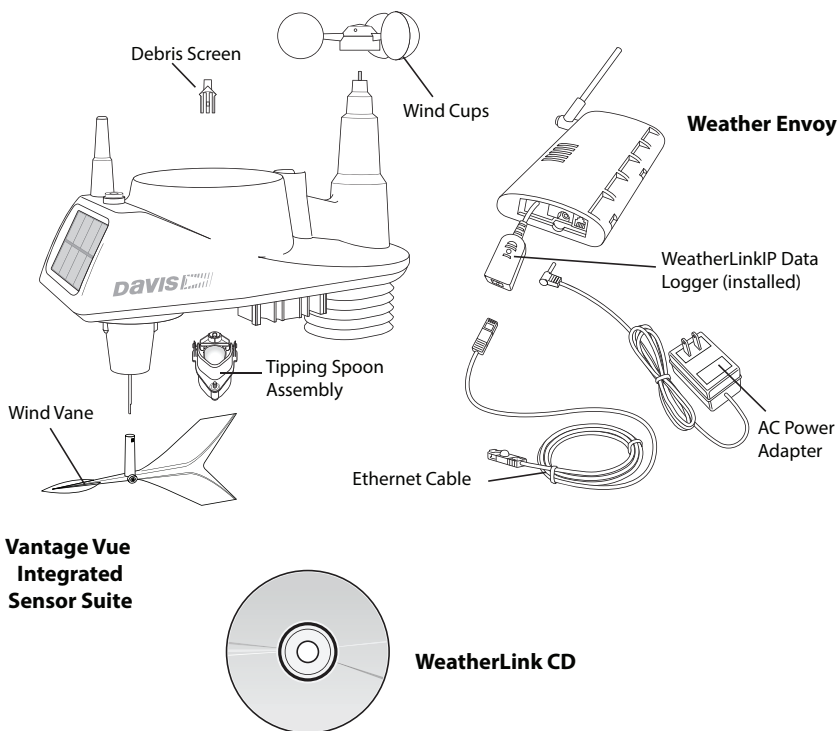
Weather Box User Guide

Weather Box has everything you need to quickly get your weather data onto your computer, the web, and your smartphone. It includes a Vantage Vue® wireless Integrated Sensor Suite (ISS), which collects outside weather data. The ISS sends the data wirelessly to the included Weather Envoy via a powerful, frequency-hopping, spread-spectrum radio. The ISS is solar powered and includes a battery back-up. From the Envoy, the data can be downloaded to your computer via the included WeatherLinkIP data logger, which also uploads it automatically to your page on WeatherLink.com. Your data is always accessible via the Internet or a smartphone app.

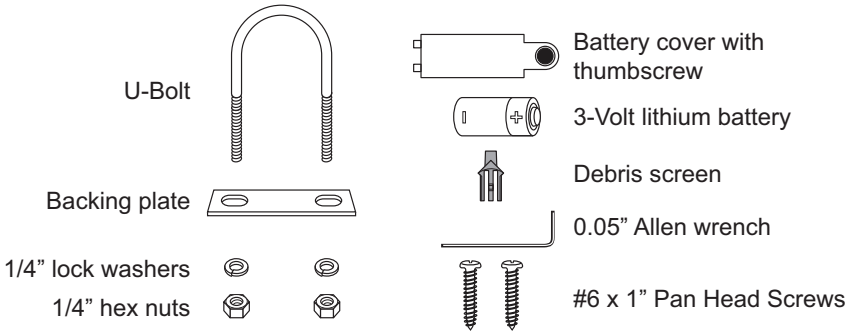
Follow these steps to begin enjoying your weather data.

- Assemble the Vantage Vue ISS
- Connect the Weather Envoy
- Log on to WeatherLink.com
- Download the Mobile App
- Install & Configure WeatherLink Software
- Mount the ISS

Included Components and Hardware



Hardware



Note: If any of the hardware components are missing or not included, contact Customer Service toll free at 1-800-678-3669 about receiving replacement hardware or other components.



Assemble the Vantage Vue ISS

The Vantage Vue ISS contains a rain collector, temperature/humidity sensor, anemometer, and wind vane. The temperature/humidity sensor is mounted in a passive radiation shield to minimize the impact of solar radiation on sensor readings. The anemometer measures wind speed, and the wind vane measures wind direction.

The radio transmitter is housed within the ISS. It collects outside weather data from the ISS sensors and transmits that data to the Weather Envoy.

Note: Your Vantage Vue ISS can transmit to a Vantage Vue or Vantage Pro2 console. You can purchase one or more consoles to use in different rooms.

Prepare the ISS for Installation

It is best to prepare the ISS for installation inside, near your computer so that you can easily verify data from the ISS before final installation.

Tools Needed

- Adjustable wrench or 7/16" (11 mm) wrench
- Compass or local area map

Note: Use a clean, well-lit work table or work area to prepare the ISS for installation.

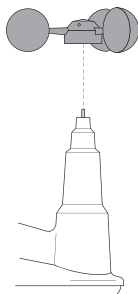
1. Attach the wind cups to the anemometer.
2. Attach the wind vane.
3. Install the rain collector tipping spoon assembly.
4. Install the debris screen in the rain collector.
5. Install the ISS battery to apply power.

Attach the Wind Cups to the Anemometer

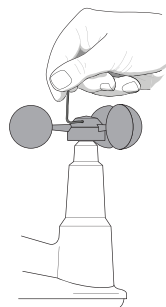
The Vantage Vue anemometer measures wind speed. The wind cups are mounted on the anemometer shaft on the top of the ISS assembly.

1. Gently slide the wind cup assembly down onto the anemometer's stainless steel shaft as far as it will go, as shown.
2. Use the Allen wrench provided to tighten the set screw near the top of the center hub of the wind cups, as shown. Ensure that the set screw is screwed in fully and is tight.
3. Pull gently on the hub to ensure that the wind cups are securely fastened to the shaft.
4. Spin the wind cups to make sure they spin freely.

Install cups onto stainless steel shaft.



Tighten set screw with Allen wrench.

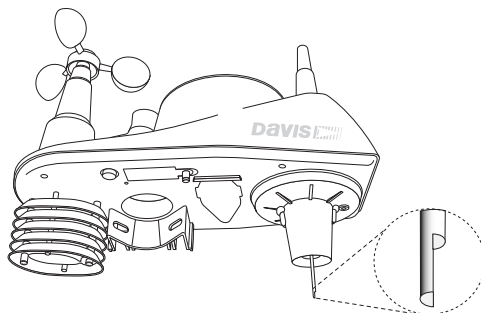


Note: If the wind cups don't spin freely, loosen the set screw, remove them from the shaft, and repeat the wind cup installation process.

Attach the Wind Vane

The Vantage Vue wind vane measures wind direction. The wind vane is mounted on a stainless steel shaft on the bottom of the ISS assembly.

1. Hold the ISS assembly on its side with the anemometer and radiation shields on your left, the wind vane shaft on your right and the wind cups away from you.
2. When the ISS is held in this manner, the wind vane shaft is horizontal, and will orient itself so that its flat side will be facing *to the right*, as shown.
3. Holding the ISS assembly with your left hand, grasp the wind vane with your right hand so that the "arrowhead" end *is pointed down*.
4. Gently slide the wind vane onto the wind vane shaft, rotating the wind vane slightly left and right if necessary, **until the end of the shaft is visible and protrudes slightly from the bottom surface of the wind vane**.
5. Secure the wind vane to the shaft by firmly tightening the wind vane set screw with the Allen wrench provided.



Install the Rain Collector Tipping Spoon Assembly

1. Locate the tipping spoon assembly cavity on the underside of the ISS Base.
2. Insert the wider end of the tipping spoon assembly into the slot first, sliding it under the raised lip of the slot.
3. Fit the narrow end into the slot and tighten the thumbscrew securely.

Install the Debris Screen

The Vantage Vue ISS rain collector debris screen captures debris that may otherwise clog your rain collector.

1. Locate the small black plastic ISS debris screen in your hardware package.
The debris screen has four small tabs that hold it in place in the base of the rain collector.
2. Holding the ISS assembly with one hand, and holding the debris screen by the top, press it into the opening in the rain collector until the tabs snap into the opening.

Install the Battery

The Vantage Vue ISS stores energy from the solar panel for power at night. A 3-volt lithium battery provides a backup power source. The battery compartment is located on the underside of the ISS base. The compartment cover is included in the hardware packet.

To install the ISS backup battery.

1. Insert the 3-volt lithium battery into the ISS battery compartment, being sure to match the “+” sign on the battery with the “+” sign embossed on the inside of the battery compartment.
2. Ensure that the battery is properly in place, install the battery compartment cover, and tighten the thumbscrew. The green LED transmitter will light, then begin to flash every 2.5 seconds to show transmission of a data packet. This flashing will stop within a few minutes to conserve battery life.



Connect the Weather Envoy

Prepare the Weather Envoy

- Connect the Weather Envoy to your local computer
- Install AC power source
- Install optional batteries
- Mount your Envoy
- Connect Envoy to WeatherLink software
- Set up the Envoy using WeatherLink software

Connect Weather Envoy to Local Computer

Note: When connecting the Ethernet cable from the Envoy to the router, it is important that the Envoy has no power, either from the AC connector or batteries.

1. Connect one end of the Ethernet cable to the WeatherLinkIP data logger.
 2. Locate a free Ethernet port on your broadband or DSL router and connect the cable to the port.
-

Note: Be sure to connect the Ethernet cable BEFORE powering up the Envoy with the AC Adapter or batteries.

3. Connect AC power adapter. Insert the power adapter plug into the power jack on the end of the Envoy case. It's next to the data logger output cable. Plug the adapter into the electrical socket.
-

Note: An Envoy using a WeatherLinkIP data logger requires use of the AC-power adapter. Battery power can be used for short-term backup power in the event of a power outage, but an Envoy with WeatherLinkIP should use the AC-power adapter as its main source of power.

The Weather Envoy beeps two times, occurring within one second of each other. On power-up, the IP data logger will negotiate its connection with the router.

4. **Write down the Device ID and Key** located on the side of the WeatherLinkIP data logger for further use.

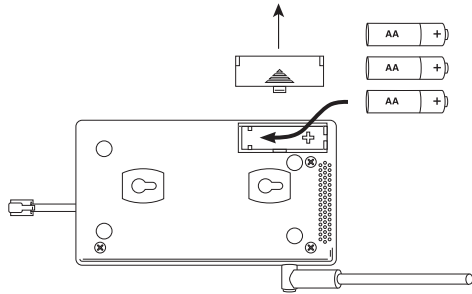
The Device ID (DID) and Key uniquely identify your data logger on the WeatherLink Network (www.weatherlink.com). They are both required to create a login on WeatherLink.com and are used to connect the WeatherLinkIP data logger to the software.

Because WeatherLinkIP is continuously uploading current weather information to the www.weatherlink.com, leave the WeatherLinkIP and Envoy connected to your router at all times.

Install Backup Batteries

The Weather Envoy is supplied with an AC power adapter. You should install batteries to act as backup power. Batteries will provide enough power to operate for less than one day.

1. Find the battery cover on the back side of the Envoy case.
2. Remove the battery cover by pressing on the arrow embossed on the cover and sliding the cover away from the case.
3. Insert three AA-cell batteries, negative terminal (flat side) first. Replace the battery cover on the case.

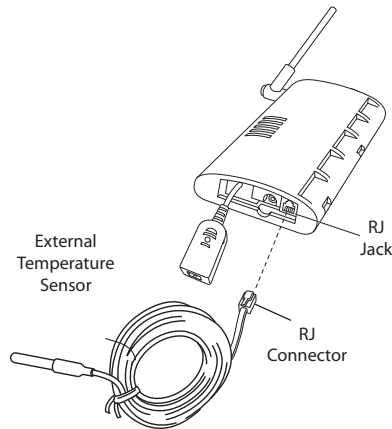


Optional: Adding an External Temperature Probe

Your wireless Weather Envoy has a built-in temperature-humidity sensor as well as the barometer. The temperature and humidity are reported as “Inside Temperature” and “Inside Humidity.”

You may replace the built-in temperature-humidity sensor with an external temperature probe with a 25’ (7.6 m) cable, which can be used to measure the temperature of air, water, or soil. The External Temperature Probe with RJ connector comes in two models: 6475 (with stainless steel probe) or 6477 (with durable plastic probe).

Simply plug the RJ connector of the temperature probe into the RJ jack on the bottom of the Envoy.



Mount Your Weather Envoy

You can place your Envoy on your desktop or install it on a wall near your router.

Envoy Location

You should place the Envoy in a location where it is easily accessible and can be easily connected to a router. For more accurate readings, follow these suggestions:

- Avoid placing the Envoy in direct sunlight. This may cause erroneous inside temperature and humidity readings and may damage the unit.
- Avoid placing the Envoy near radiators or heating/air conditioning ducts.
- If you are mounting the Envoy on a wall, choose an interior wall. Avoid exterior walls that tend to heat up or cool down depending on the weather.

The range of the radio transmission that the Envoy can receive from the wireless ISS depends on several factors. Try to position the Envoy as close to the transmitting weather station as possible for best results.

Typical maximum ranges are:

- Line of sight: 1000 feet (300 m).
- Under most conditions: 200 - 400 feet (60 - 120 m).

Other range and transmission considerations include:

- Range may be reduced by walls, ceilings, trees, foliage, a metal roof or other large metal structures or objects such as aluminum siding, metal ducts, and metal appliances, such as refrigerators.
- Transmission between wireless units may be obscured by something unidentifiable, or by some obstacle that can't be worked around.

Note: For best results, orient the ISS antenna and the Envoy antenna so that the orientation and angles of the antennas are parallel to each other.

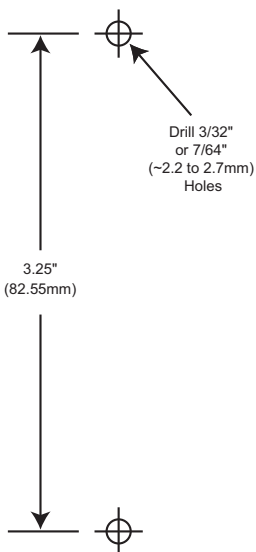
For better reception over greater distances or for weaker signals, consider using a Wireless Repeater (#7626 or 7627) or Long-Range Repeaters (# 7654) to strengthen the signal or increase the distance between your ISS and the Weather Envoy.

Wall Mounting the Envoy

1. Use the provided wall mounting template as an example of hole spacing and alignment when installing your Envoy.
2. Use the template as a guideline for the hole markings on the wall where you want to mount the Envoy, and use a pencil to mark the location for the two mounting screws.

The screws should be 3.25" (82.5 mm) apart and lined up vertically.

3. Drill the marked locations with a 3/32" or 7/64" (2.2 to 2.7 mm) drill bit.
4. Drive the two #6 x 1" (3.5 mm x 25 mm) pan head self-threading screws into the wall.
5. Leave at least a 1/8" (3 mm) space between the wall and the heads of the screws.
6. Slide the keyholes on the back of the case over the two screw heads.



3

Log On to WeatherLink.com and Verify Data From the ISS

Once you have connected the WeatherLinkIP data logger to your router, the data logger starts uploading your current weather data to your page on the WeatherLink Network. To see your weather data over the Internet:

1. Go to www.weatherlink.com
2. Click **Register**, then click "Register with WeatherLinkIP."
3. Read the license agreement and register your account using the Device ID and Key information provided on the data logger.
4. Create your account.
5. To view your current weather data on the web, click the My Weather tab at the top of the page. Within a few minutes you should see your weather data online. (Anytime you want to see your current data go to www.weatherlink.com/user/<username>.)

4

Download the Mobile App

Download the free WeatherLink Mobile App to see your station's data on your smartphone. Search for WeatherLink on iTunes or the Google Play Store.

5

Install and Configure WeatherLink Software

Install the Software

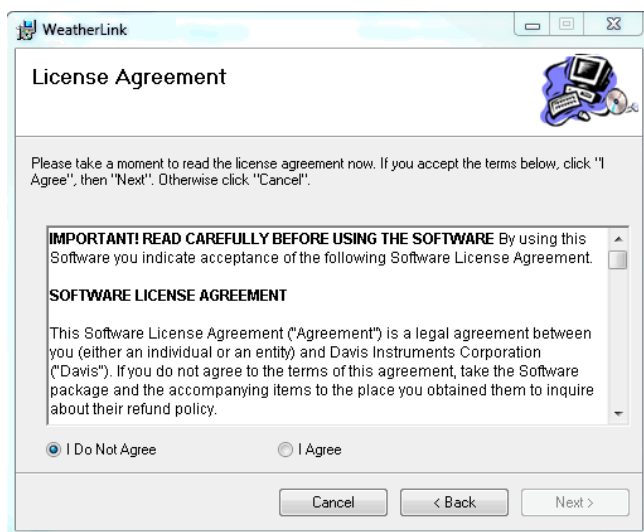
Follow the steps below to install the WeatherLink software.

1. Place the WeatherLink software CD in your CD ROM drive.

The install program should start automatically. If the install program does not start, select **Run** from the **Start** menu, type D:\SETUP (or the correct letter for your CD ROM drive), and click **OK** to begin the installation.

2. Click **Accept** to install the necessary components.

The **License Agreement** dialog box displays.



3. Review the license agreement, click **I agree** and click **Next**. The **Choose Destination Location** dialog box displays.
4. Select the default location to install WeatherLink or find another location by clicking **Browse**.

Note: If you are upgrading your software from a previous version, click **Browse** to search for the directory or folder of the previous version of WeatherLink.

5. Choose whether to make WeatherLink available to anyone who uses that computer or just yourself. Click **Next**. The **Confirm Installation** dialog box displays.
6. Click **Next** to start the installation. The **Installing WeatherLink** dialog box displays the installation progress. The **Installation Successful** dialog box displays once the software installation has been completed.
7. Click **OK**. WeatherLink has been installed successfully.

Configure WeatherLink Software

Walk through the following procedures to setup and configure your WeatherLink software and the connection to your Weather Envoy.

Running the Software

To run the software, double-click the **WeatherLink** icon. If no stations have been assigned in the program directory, the software prompts you to add a station (see below for details).

If this is a software upgrade and if there is more than one station in the program directory when the application opens, the last station that was displayed is automatically opened.

Station Setup

The software includes a station setup “Walkthrough” that steps you through the weather station configuration procedures. After adding a new station, the **Walkthrough** dialog box automatically displays. By selecting **Yes**, Walkthrough begins. By selecting **No**, the Walkthrough is canceled.

You can set up and configure your station by separately selecting all of the necessary setup options from the **Setup** menu. A Walkthrough option is included in the **Setup** menu which allows you to access the Walkthrough at any time.

During the Walkthrough process, the software displays a series of dialog boxes. At each step in the Walkthrough process, confirmation boxes are provided to perform or skip the next step in the Walkthrough. To continue, select **OK**. To skip this step and move to the next step, select **Skip**. To cancel the entire Walkthrough process, select **Cancel**.

Note: Please refer to the WeatherLink Online Help for more information about the complete Walkthrough process.

Communication Port Settings

WeatherLink contains a dialog box for configuring the communication channel for your WeatherLinkIP data logger. Use the **Communications Port** dialog box to select the communications type and to test communication between the computer and the station.

1. Select **Communications Port** from the **Setup** menu or use the Walkthrough to display the dialog box.

The **Communications Port** dialog box displays.

2. Select **TCP/IP** from the **Communications** field.

-
3. Select one of the three available radio buttons that best describes the type of TCP/IP connection you want to setup:
 - **Local Device ID** — Connects to the WeatherLinkIP data logger through a Local Area Network connection. Use this option if your computer is on the same subnet as your WeatherLinkIP data logger.
 - **Remote IP Address** — Connects the WeatherLinkIP data logger and station to the WeatherLink Software through a remote connection using an IP address. This connection generally requires a static IP address.

Note: This option is only used if your WeatherLinkIP-equipped Envoy is at a location on the Internet that is remote from the location of the computer on which you are running your WeatherLink software. It is an advanced setup option. See the WeatherLink Online Help for more information.

- **Web Download** — Downloads archived data that has been automatically uploaded to WeatherLink.com.

For a Local Connection:

1. Click **Local Device ID**.
2. Click **Find** to find the Device ID for the data logger.
3. Click **Test** to verify communication.
4. Click **OK** to save the Communications Port settings.

For Web Download:

1. Click **Web Download**.

Note: Choosing Web Download inactivates functions that require communication with the Envoy.

2. Enter the user ID and password you created on www.weatherlink.com.
3. Click **OK** to save the Web Download settings.

Set Transceiver

Your Weather Envoy is set at the factory to “listen” to the ISS with ID 1. Since the transmitter ID of your ISS has also been factory set to ID 1, you should not have to change this setting. However, if you do change the ISS ID, use the **Set Transceiver** dialog box to change your Weather Envoy to the “listen” to the new ID.

Note: This dialog box is the only available tool for configuring the transmitter ID and repeater ID settings on your Weather Envoy.

To set transceiver options:

1. Select **Set Transceiver** from the **Setup** menu; the dialog box displays.
Select a Station Type for each of the possible eight transmitter IDs the Envoy may be receiving. See the WeatherLink Online Help System for more information on configuring the stations, the retransmit feature and configuring the Envoy for using repeaters.

6 Mount the ISS

Choosing a Location for the ISS

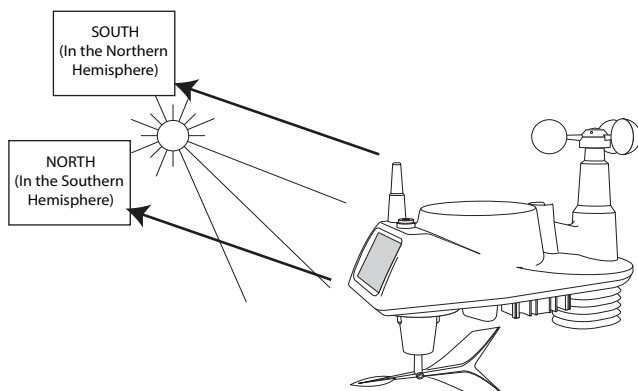
To ensure that the Vantage Vue weather station performs at its best, use these guidelines to select the optimum mounting location for the ISS. Be sure to take into consideration ease of access for maintenance and wireless transmission range when siting the station.

Note: When selecting a location for installing your ISS, especially on a rooftop, make sure it is a location far from power lines. Seek professional help if you are uncertain about the safety of your installation.

ISS Installation Guidelines

Note: These siting guidelines reflect an ideal condition. Rarely is it possible to create the perfect installation. The better the siting, the more accurate your data will be.

- Place the ISS away from sources of heat such as chimneys, heaters, air conditioners and exhaust vents.
- Place the ISS at least 100' (30 m) away from any asphalt or concrete roadway that readily absorbs and radiates heat from the sun. Avoid installations near fences or sides of buildings that receive a lot of sun during the day.
- Install the ISS as level as possible to ensure accurate rain and wind measurements. Use the built in bubble level on the top of the ISS, just above the solar panel, to make sure the ISS is level.
- In the Northern Hemisphere, the solar panel should face south for maximum sun exposure.
- In the Southern Hemisphere, the solar panel should face north for maximum sun exposure.



Note: If you install the ISS with the solar panel pointing in a direction other than south, you will need to use the wind direction calibration function in the WeatherLink software in order to obtain accurate wind direction readings.

-
- Ideally, mount the ISS so that it is between 5' (1.5 m) and 7' (2.1 m) above the ground in the middle of a gently sloping or flat, regularly mowed grassy or naturally landscaped area that drains well when it rains. You can also mount the ISS on the roof, between 5' (1.5 m) and 7' (2.1 m) above the roof surface. For areas with average maximum yearly snow depths over 3' (0.9 m), mount the ISS at least 2' (0.6 m) above this depth.
 - Never install the ISS where it will be directly sprayed by a sprinkler system.
 - Avoid installations near bodies of water such as swimming pools or ponds.
 - Do not locate the ISS under tree canopies or near the sides of buildings that create "rain shadows." For heavily forested areas, site the ISS in a clearing or meadow.
 - Site the ISS in a location with good sun exposure throughout the day.
 - For agricultural applications:
 - Install the ISS so that it is between 5' (1.5 m) and 7' (2.1 m) above the ground and in the middle of the farm between similar crop types (i.e. two orchards, two vineyards, or two row crops), if possible.
 - Avoid areas exposed to extensive or frequent applications of agricultural chemicals (which can degrade the sensors).
 - Avoid installation over bare soils. The ISS performs best when installed over well-irrigated, regularly mowed grass
 - If the last three guidelines cannot be met, install the ISS at the edge of the primary crop of interest.

Important: Once you have chosen your location, **test the transmission distance** to the Envoy by temporarily placing the ISS at the site and making sure new data appears on WeatherLink.com. (You can do this on your smartphone if you have downloaded the mobile app.) Remember that new data uploads every minute on WeatherLink.com, so data will not appear instantly. Refresh your browser (F5) to see the latest data.

Siting guidelines that may affect the anemometer

- For optimal wind data, mount the ISS so that the wind cups are at least 7' (2.1 m) above obstructions such as trees or buildings that may obstruct wind flow.
- For optimal wind data, you may mount the ISS on a roof, keeping in mind ease of access to the ISS for maintenance and safety considerations. Ideally, mount it so that the wind cups are at least 7' (2.1 m) above the roof apex.
- The standard for meteorological and aviation applications is to place the anemometer 33' (10 m) above the ground. Seek professional help for this such installation.

Note: For roof mounting, and ease of installation, we recommend using the optional tripod (#7716). For other installations, use the Mounting Pole Kit (#7717).

Note: For more detailed siting suggestions, see Application Note: Reporting Quality Observations to NOAA on the Davis Weather Support section on www.davisnet.com.

Install the ISS

The Vantage Vue ISS can only be mounted on the top of a pole or rod. You will use the U-bolt and associated nuts and washers that are included with your ISS mounting hardware package to install the ISS on a pole. (See “Hardware” on page 2.)

Note: A mounting pole is not included with your Vantage Vue ISS and must be purchased separately, either from Davis Instruments or from your local hardware retailer.

Recommended Accessories for Pole Mounting

- Use the Mounting Tripod (#7716) for easiest mounting.
- Use the Mounting Pole Kit (#7717) to raise the installation height of the ISS by up to 37.5" (0.95 m).

General Guidelines for Installing on a Pole

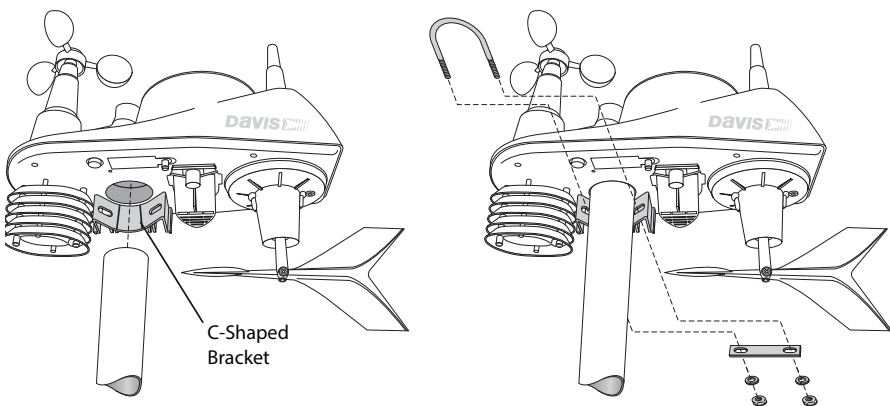
- With the supplied U-bolt, the ISS can be mounted on a pole or rod having an outside diameter ranging from 1" to 1.75" (25 – 44 mm).
- To mount on a smaller pole, obtain a U-bolt that fits the base openings but that has a longer threaded section. If mounting the ISS on a smaller pole with the included U-bolt, the threaded sections of the U-bolt will be too short to securely mount the ISS.

Installing the ISS on a Pole

1. If you are mounting your ISS on a Davis Mounting Tripod or the pole included with a Davis Mounting Pole Kit, follow the instructions included with those Davis products for proper installation.

If you are not using one of these Davis products, mount on a galvanized steel pole having an outside diameter ranging from 1" to 1.75" (25 – 44 mm).

Note: It is important that the mounting pole be plumb. You may wish to use a level such as a magnetic “torpedo level” to assure that the ISS, when mounted on top of the pole, will be level.



2. Using the illustration above as a guide, hold the ISS so that the wind cups and radiation shield are on the left and gently place the ISS on top of the pole.

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3. While holding the mounting base of the ISS against the pole, place the two ends of the U-bolt around the pole and through the two holes in the C-shaped bracket on the base.
 4. Slide the metal backing plate over the bolt ends where they extend out from the far side of the bracket.
 5. Secure the backing plate with a lock washer and hex nut on each of the bolt ends, as shown in the illustration.
 6. Tighten the hex nuts **with your fingers only** so that the ISS is just secure enough on the pole for you to release your grip.
 7. If you are in the Northern Hemisphere, rotate the ISS on the pole so that the solar panel is facing true south; if you are in the Southern Hemisphere, rotate the ISS so that the solar panel is facing true north. The more precisely the solar panels face due south or north, the more accurate your wind direction readings will be. If you cannot install your ISS so that the solar panel faces true south, you will need to calibrate the wind direction. See “Calibrate Wind Direction (if necessary)” on page 16.
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Note: Do not rely on a compass unless it is properly calibrated. In North America there can be up to 15° variation between true north and a magnetic north compass reading.

8. When the ISS is properly oriented, tighten the hex nuts with a wrench. Do not exceed 96 inch-pounds (10.8 newton-meters) of torque.
-

Note: Refer to the bubble level on the top of the ISS to make sure it is as level as possible.

Finishing the Installation

Clearing Data Collected During Testing and Installation

Now that the ISS is mounted outside, any data that was collected during testing and mounting should be cleared.

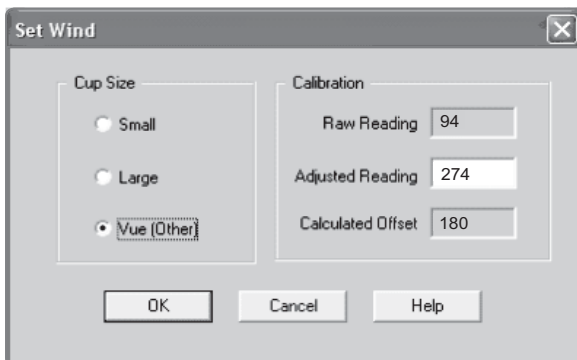
To clear all the collected data:

1. Run WeatherLink software.
2. Select **Clear** from the **Setup** menu.
3. The Clear dialog box will appear.
4. Choose **Check All**, then click **OK** to clear all the data.

Calibrate Wind Direction (if necessary)

The wind vane is calibrated at the factory to be accurate when the solar panel is pointing true south. If you are in the Southern Hemisphere or anywhere where your ISS cannot be installed with the solar panel facing south, you must calibrate the wind direction readings in WeatherLink software.

1. Open WeatherLink.
2. In the **Setup** menu, choose **Set Wind**.
3. The Set Wind dialog box displays. Under “Calibration,” three values appear. The first, “Raw Reading,” shows the current wind direction in degrees, if the solar panel faced true south. The middle, “Adjusted Reading” can be edited. The last, “Calculated Offset” is automatically generated using the raw and adjusted values. Calibrate your wind direction by entering a value in the Adjusted Reading that causes the correct Calculated Offset ($\text{Raw} - \text{Adjusted} = \text{Calculated Offset}$). For example:
 - If the solar panel faces due **north**: Calculated Offset should be 180.
(Add 180 to the Raw Reading value, subtract 360 if the total is more than 360.)
 - If the solar panel faces due **east**: Calculated Offset should be 270.
(Add 270 to the Raw Reading value, subtract 360 if the total is more than 360.)
 - If the solar panel faces due **west**: Calculated Offset should be 90.
(Add 90 to the Raw Reading value, subtract 360 if the total is more than 360.)



Example of calibrating an ISS with Solar Panel facing true north.

Maintenance and Troubleshooting

Vantage Vue ISS

Maintenance

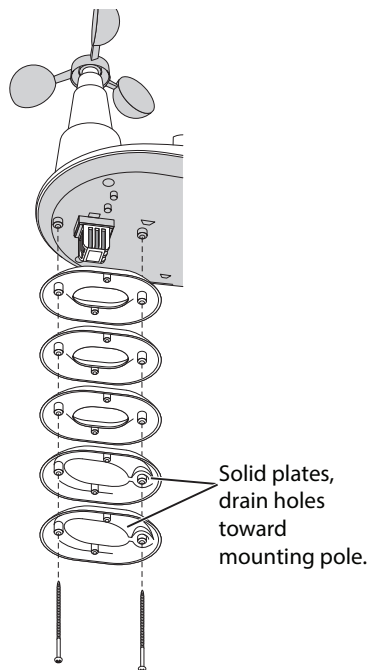
Cleaning the Radiation Shield

The outer surface of the radiation shield should be cleaned when there is excessive dirt and build-up on the plates. Use a damp cloth to clean the outer edge of each ring.

Note: Spraying down or using water excessively to clean the radiation shield can damage the sensitive sensors or alter the data the ISS is transmitting.

Check the radiation shield for debris or insect nests at least once a year and clean when necessary. A buildup of material inside the shield reduces its effectiveness and may cause inaccurate temperature and humidity readings.

1. Using a Phillips head screwdriver, loosen the two #6 x 2 1/2" screws holding the five radiation shield plates together, as shown.
2. Taking care to maintain the order in which the five plates are assembled, separate the plates as shown and remove all debris from inside the shield.
3. Reassemble the plates in the same order in which they were disassembled, and fasten them together using a Phillips head screwdriver to tighten the #6 x 2 1/2" screws, as shown.



Cleaning the Rain Collector, Debris Screen, and Tipping Spoon Module

To maintain accuracy, thoroughly clean the rain collector cone and debris screen as needed or at least once a year.

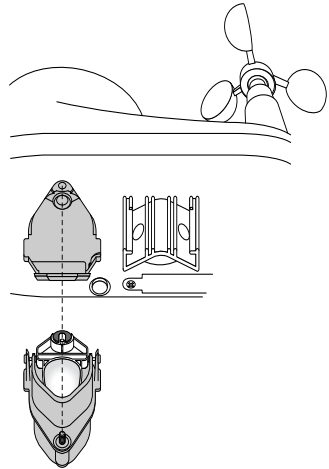
Note: Cleaning the rain collector and tipping spoon may cause false rain readings. See "Clearing Data Collected During Testing and Installation" on page 16.

1. Use a damp, soft cloth to remove any debris from the rain collector and debris screen.
2. Use pipe cleaners to clear any debris remaining in the screen.

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3. When all parts are clean, rinse with clear water.

To clean the tipping spoon assembly, it must first be removed from the ISS base.

1. Unscrew the thumbscrew securing the tipping spoon assembly to the ISS base. Slide the assembly down and away from the base.
2. Use a damp, soft cloth to gently remove any debris from the tipping spoon assembly, being careful not to damage any moving parts or scratch the spoon surface.
3. When all parts are clean, rinse with clear water, and replace the assembly. See “Install the Rain Collector Tipping Spoon Assembly” on page 4.



Troubleshooting

The Transmitter ID LED on the ISS did not light after I installed the battery.

Press and release the white transmitter ID pushbutton next to the battery compartment.

If the light still does not come on after pressing the transmitter pushbutton, there may be a problem with the ISS transmitter. Call Technical Support.

If, after pressing the Transmitter Pushbutton, the Transmitter ID LED flashes every 2.5 seconds (indicating transmission) but your Envoy isn't picking up a signal anywhere in the room, it could be related to one of the following causes:

- You changed the ISS Transmitter ID at the ISS or Envoy, but not at both.
- Reception is being disrupted by frequency interference from outside sources, or the distance and barriers are too great.

Note: Interference has to be strong to prevent the Envoy from receiving a signal while in the same room as the ISS.

- There is a problem with the Envoy.

If a problem with receiving the wireless transmission still exists, please contact Technical Support.

The data is not what I expect.

Comparing data from your ISS to measurements from TV, radio, newspapers, or a neighbor is NOT a valid method of verifying your readings. Readings can vary considerably over short distances. How you site the ISS can also make a big difference. If you have questions, contact Davis Technical Support.

Davis stations use a very robust radio and are becoming more and more common. There may be a Davis station nearby that is already transmitting on Transmitter ID 1, and your Envoy is picking up its signal rather than yours. You should change the transmitter ID of your ISS and the Envoy.

To set a new transmitter ID on the ISS:

1. Push and hold the transmitter ID pushbutton until the LED begins flashing quickly. This indicates it is in the setup mode.
2. Release the pushbutton, and the LED will go dark.
3. Quickly push the pushbutton the number of times equal to your desired new transmitter ID. That is, if you want to change the ID to “3,” push the pushbutton three times; for a desired ID of “4,” push the pushbutton four times.

After four seconds have elapsed with no further presses, the LED will blink the same number of times as the new transmitter ID. (After blinking the transmitter ID number, the light will begin to flash each time a packet is transmitted, about every 2.5 seconds.)

You must configure the Envoy to “listen” to this new ID number. See “Set Transceiver” on page 11.

My rain data seems too low.

If the rain collector seems to be under-reporting rainfall, clean the debris screen and tipping spoon module to clear out any debris.

The wind cups are spinning but my displays shows 0 mph.

The wind cups may not be turning the shaft. Remove the cups from the anemometer by loosening the set screw. Put the cups back onto the shaft and make sure to slide them down the shaft as far as possible. Retighten the set screw.

The wind cups don't spin or don't spin as fast as they should.

The anemometer may be located where wind is blocked by something, or there may be friction interfering with the cups' rotation. Remove the wind cups by loosening the set screw, and clear out any insects or debris which may be interfering with the cup rotation. Turn the shaft the cups rotate on. If it feels gritty or stiff, contact Davis Technical Support.

Note: Do not lubricate the shaft or bearings in any way.

I can't seem to establish a communication between WeatherLink and the Weather Envoy.

Start by checking the Envoy's own diagnostics.

Note: The data logger uses non-volatile memory, so you won't lose any data you've already recorded.

1. Remove power, both AC and batteries. Remove any extension cables that are in the system. Open the Envoy case and unplug the data logger.
 2. Wait at least two minutes, then plug the data logger back in. Make sure it is plugged in firmly and completely.
 3. Power up with the AC Adapter. You should hear two beeps, each of which occurs when the Envoy passes one of its diagnostic tests. Each beep follows the previous
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after about a second. The first beep tells you the processor is running. The second beep verifies the installation of the data logger. (If you do not hear two beeps, contact Davis Instruments Technical Support.)

The data logger is communicating with the Envoy, but data is still not being communicated to WeatherLink.com and/or WeatherLink software.

1. See if you have a connection to the Internet established. Verify that you can access a website from a computer connected to the router or switch that the WeatherLinkIP data logger is using.
2. Check the cable connection between your WeatherLinkIP data logger and the broadband router. Check if the green light on the WeatherLink IP data logger is on or blinking.
3. Leaving the data logger connected to your router, disconnect power from both your router and your Envoy, both AC and batteries.
4. Return power to the router. Wait for at least one minute as the router reboots and re-establishes connections.
5. Return AC power to the Envoy. On power up, you will hear two beeps.
6. Check if the green light on the WeatherLink IP data logger is on. If it is not on, contact Technical Support.
7. *For WeatherLink.com:* Wait five minutes. Go to www.weatherlink.com and check that your “My Weather” page is currently being updated.
8. *For WeatherLink Software -* Open WeatherLink. Open the **Communications Port** dialog box. Select TCP/IP if it is not already selected. Select the communications type under TCP/IP you wish to use.

For Local Connections Only

- In the **Communications Port** dialog box, select **Local Device ID** and click **Find**. If the data logger is communicating on the network, the **Communications Settings** dialog box displays the Device ID and IP address of your data logger. If the dialog box does not display, check connections and try again or contact Technical Support.
- Click **Test** to verify communication between the station and the software.

For Web Download Only

- In the **Communications Port** dialog box, verify that the **User ID** and **Password** are the same User ID and Password you used when you created your web account on www.weatherlink.com.

In the WeatherLink software, the barometer graph on the Bulletin does not “fill in” completely.

When you first load the bulletin, the barometer graph will only fill in completely when you have data in your database for the last six hours. Make sure:

- There is data in your database for the span of the barometer graph.
- The time and date of the stored barometer data is correct in your database.
- The time and date on the PC is correct.
- The time and date on the weather station are correct.

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- In the **Station Configuration** dialog box, set the **Download archive data when Bulletin or Summary is started** drop-down box to **Always** or to **Confirm each time**.

In the WeatherLink software, no wind direction reading (or dashes instead of a reading) appears in my database.

If there is no wind speed when the direction is being sampled, wind direction is not recorded. During intervals with very little wind speed, no direction may be recorded.

Note: Because high wind speed is sampled more often, it is possible to have a high wind speed but no wind speed or direction.

WeatherLink says “No new data to download” but I know there’s data there.

The Weather Envoy system is “smart” enough to send only data it hasn’t already sent to the computer. So, when you initiate a new download, the program will retrieve only data recorded after the last record shown in the WeatherLink’s **Browse Window**. Reboot and reseal the data logger. Older data may still be in the data logger, if you have not cleared its memory. To see how many of these older records are stored in the logger, create a new station (File>New Station) and download the data into this new, empty database. Because there are no records stored in the database you just created, WeatherLink software will download everything in the data logger.

Next, try clearing the archive memory using the clear dialog box. You will lose any data not already downloaded in your archive memory, but all of your calibration numbers and alarm settings will remain intact. If this doesn’t work, reboot your Weather Envoy (that is, remove and then restore power to the Envoy).

When viewing data in the WeatherLink software, dashes appear in place of a value for functions other than wind direction. Why?

If no data was recorded by a sensor or if bad data was recorded for a sensor (for example, the sensor was malfunctioning), the software dashes out the entry rather than showing invalid data. You can use the record editor to correct these entries.

Contacting Technical Support

If you have questions about the Weather Box system, or encounter problems installing or operating the weather station, please contact Davis Technical Support.

Note: Please do not return items to the factory for repair without prior authorization.

Online:	www.davisnet.com See copies of user manuals, product specifications, application notes, software updates, and more.
E-mail:	support@davisnet.com
Telephone:	(510) 732-7814 Monday – Friday, 7:00 a.m. – 5:30 p.m. Pacific Time.
Fax:	(510) 670-0589

ISS Specifications

Operating Temperature.....	-40° to +150°F (-40° to +65°C)
Non-operating (Storage) Temperature	-40° to +158°F (-40° to +70°C)
ISS Current Draw	0.20 mA (average), 30 mA (peak) at 3.3 VDC
ISS Solar Power Panel	0.5 Watts
ISS Battery	CR-123 3-Volt Lithium cell
Battery Life (3-Volt Lithium cell)	8 months without sunlight - greater than 2 years depending on solar charging
Wind Speed Sensor	Wind cups with magnetic detection
Wind Direction Sensor	Wind vane with magnetic encoder
Rain Collector Sensor	Tipping spoon with magnetic detection, 0.01" per tip (0.2 mm with metric rain cartridge, Part No. 7345.319), 18.0 in ² (116 cm ²) collection area
Temperature Sensor	PN Junction Silicon Diode
Relative Humidity Sensor.....	Film capacitor element
Housing Material.....	UV-resistant ABS & ASA plastic

Update Interval by Sensor	
Barometric Pressure	1 min.
Inside Humidity	1 min.
Outside Humidity	50 sec.
Dew Point	10 sec.
Rainfall Amount	20 sec.
Rain Storm Amount	20 sec.
Rain Rate	20 sec.
Inside Temperature	1 min.
Outside Temperature	10 sec.
Heat Index	10 sec.
Wind Chill	10 sec.
Wind Speed	2.5 sec.
Wind Direction	2.5 sec.
Direction of High Speed	2.5 sec.

