## Pressure Trend

The pressure trend arrow indicates the current barometric trend, measured over the last three hours. The pressure trend is updated every 15 minutes. The pressure trend requires three hours of data in order to be calculated so it won't display right away on a new station. The pressure trend is indicated on the console screen, as long as the required data is available.
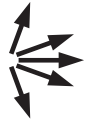
Wind Chill

Wind Chill shares the same section on the console as Dew Point and Heat Index, below the Barometric Pressure variable, next to the compass rose.
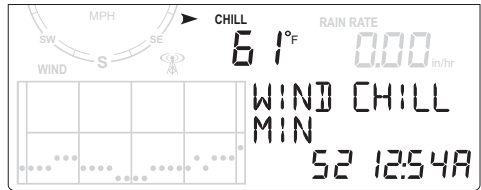
Wind Chill with information displayed in the Weather Center

1. Press 2ND then press CHILL to select Wind Chill. Wind Chill is displayed in either Fahrenheit (°F) or Celsius (°C) in whole degrees. See "Selecting Units of Measure" on page 26 for more information on changing the unit of measure.
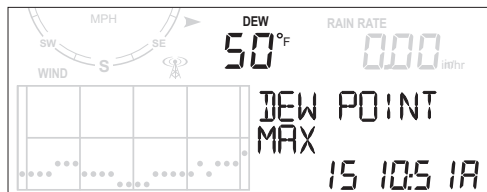
   If the unit of measure for any temperature-related weather variable is changed, the unit of measure also changes for all temperature-related variables. See "Inside and Outside Temperature" on page 18 for more information.

   The console uses the ten-minute average wind speed to calculate wind chill.
2. Press WxCEN to display the weather information available for Wind Chill in the Weather Center.
3. Press WxCEN twice to scroll through the Wind Chill-related Weather Center screens, which include:
   • **Minimum Wind Chill** — Displays lowest wind chill measurement for the day and the time it was recorded.
   • **Maximum Wind Speed** — Displays the maximum wind speed for the day and the time it was recorded.

Dew Point

Dew Point shares the same section on the console as Wind Chill and Heat Index, below the Barometric Pressure variable, next to the compass rose.

Dew Point with information displayed in the Weather Center

1. Press 2ND then press DEW to select Dew Point. Dew Point is displayed in either Fahrenheit (°F) or Celsius (°C) in whole degrees. See "Selecting Units of Measure" on page 26 for more information on changing the unit of measure.

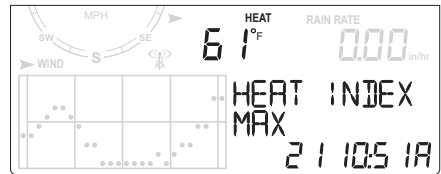   DEW

   2ND   **HUM**

   If the unit of measure for any temperature-related weather variable is changed, the unit of measure also changes for all temperature-related variables. See "Inside and Outside Temperature" on page 18 for more information.

2. Press WxCEN to display the weather information available for Dew Point in the Weather Center. Press WxCEN twice to scroll through the Weather Center screens, which include:
   - **Maximum Dew Point** — Displays the highest dew point measurement for the day with the time it was recorded.
   - **Minimum Dew Point** — Displays the lowest dew point measurement for the day with the time it was recorded.

Heat Index

Heat Index shares the same section on the console as Wind Chill and Dew Point, below the Barometric Pressure variable, next to the compass rose.

Heat Index with information displayed in the Weather Center

Press 2ND then press HEAT to display the Heat Index. Heat Index is displayed in either Fahrenheit (°F) or Celsius (°C) in whole degrees.

HEAT

2ND   **TEMP**

See "Selecting Units of Measure" on page 26 for more information on changing the unit of measure. If the unit of measure for any temperature-related weather variable is changed, the unit of measure also changes for all temperature-related variables. See "Inside and Outside Temperature" on page 18 for more information. The Maximum Heat Index (the highest Heat Index measurement recorded for the day) along with the time it occurred displays in the Weather Center section of the console.

Rain

All the rain values are displayed in the same section on the console below the Barometric Pressure variable, on the right side.

The rain values include RAIN RATE, RAIN DAY (current day's rain total), RAIN MO (monthly rain total), and RAIN YEAR (yearly rain total).
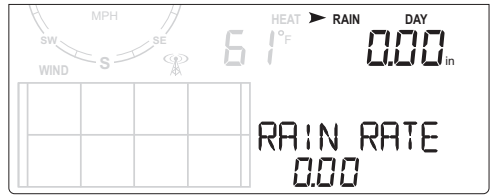
Daily Rain Total with information displayed in the Weather Center

1. Press RAIN to display the current rain rate.

   RAIN

   Rain Rate will display a number other than zero and the umbrella icon appears when two tips of the rain spoon have occurred within a 15-minute period.
2. Press RAIN again to display RAIN DAY, the rain accumulated since 12:00 midnight.
3. Press RAIN a third time to select the month-to-date precipitation data. Monthly rain displays the precipitation accumulated since the calendar month began.
4. Press RAIN a fourth time to display the year-to-date precipitation data. Yearly rain displays the precipitation accumulated since the first of the month you've chosen as the beginning of your rain season in Setup Mode (See "Screen 14: Rain Season" on page 13).
   All rain measurements may be displayed as either inches per hour (in/hr.) or millimeters per hour (mm/hr.). See "Selecting Units of Measure" on page 26 for more information on changing the unit of measure.
5. Press WxCEN to display the weather information available for all of the rain variables in the Weather Center.
6. Press WxCEN multiple times to scroll through the rain-related Weather Center screens, which include:
   • **Rain Rate** — Displays the current rate of rain (unless already displayed).
   • **Rain Rate Maximum** — Displays the maximum rain rate for the day and the time the rate occurred.
   • **Rain Last 15 Minutes** — Displays the total amount of rain recorded over the last 15 minutes.
   • **Rain Last 24 Hours** — Displays the total amount of rain recorded over the last 24 hours.
   • **Rain Day** -- Displays rain since midnight (unless already displayed).
   • **Last Storm** — Displays the rain total from the last rain event and the date on which the most recent storm ended. It takes two tips of the rain spoon to begin a storm event and 24 hours without rain to end a storm event.
   • **Rain Last __ Days** — Displays the total rain amount over a user-selected number of days. To change the number of days over which the total rain amount is displayed, press the + and - keys when this screen is displayed in the Weather Center. The number of days allowable is 26 (the last 25 days plus the current day).

Evapotranspiration (ET) (Optional)

All the Evapotranspiration values share the same section on the console as Rain values, below the Barometric Pressure variable, on the right side.
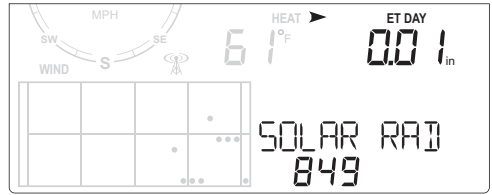
Daily Evapotranspiration with Solar Radiation information displayed in the Weather Center

Note: The Evapotranspiration, Solar Radiation and UV Index measurements are only available when the Vantage Vue console is listening to a Vantage Pro2 Plus station or other Vantage Pro2 ISS station in which a Solar Radiation and UV sensor have been installed and "VP2" has been selected in Screen 6 of the Setup Mode. See "Screen 6: Configuring Transmitter IDs" on page 9.

1. Press and release 2ND then press ET to display the daily evapotranspiration reading.

Note: If you hear a beep when selecting ET, it means the station the console is selected to hear is not a Vantage Pro2 station.

2. Press and release 2ND then press ET again to display the monthly evapotranspiration reading.
3. Press and release 2ND then press ET a third time to display the evapotranspiration reading since January 1st of the current year.
4. Press WxCEN to display the weather information available for all of the ET variables in the Weather Center.
5. Press WxCEN multiple times to scroll through the ET-related Weather Center screens, which include:
   • **ET Last __ Days** — Displays the total ET amount over a user-selected number of days. To change the number of days over which the total ET amount is displayed, press the + and - keys when this screen is displayed in the Weather Center. The number of days allowable is 26 (the last 25 days plus the current day).
   • **Solar Radiation** — Displays the current solar radiation measurement for the day.
   • **UV Index** — Displays the current UV Index.

Weather Center

Press WxCEN to view added information in the Weather Center section of the console for each variable. See each individual variable for a list of Weather Center screens available for each variable.

Light

Press LIGHT to turn on the backlight for the screen display.
Press LIGHT again to turn the backlight off.

LIGHT

Use the backlight when the LCD is not clearly visible. When
the console is battery operated, the backlight remains on as long as keys are
pressed. If no keys are being used, the backlight automatically turns off about
fifteen seconds after it is turned on. If any key is pressed while it is turned on, it
will stay illuminated for 60 seconds from the last key press. When battery
power is low, the backlight does not light.

Note: When the console receives power from the AC adapter, the backlight remains on until it is
toggled off. Leaving the backlight on for an extended period of time raises the inside
temperature reading and lowers the inside humidity reading.

To adjust the screen's contrast, press and release 2ND then
press the + and - keys multiple times while the 2nd icon
appears on the screen. The + key darkens the segments
currently displaying on the console screen. The - key lightens
the segments currently displaying on the console screen.
Adjust the contrast as desired.

+

2ND

-

Note: The step changes are subtle. You may need to press the keys several times.

Selecting Units of Measure

Most weather variables may be displayed in at least two different
measurement units, including US and metric systems, although some variables
feature more possibilities. Barometric pressure, for example, may be displayed
in millibars, millimeters, inches, or hectoPascals. You can change each
variable's units independently and at any time.

To change units:

1. Select the weather variable. See "Displaying Weather Variables" on page 16.
2. Press and release 2ND then press UNITS.

2ND **TIME**
UNITS

The selected variable's units change. Repeat steps 1 and 2
until the desired units appear.

For example, to change the barometric pressure units,
first select barometric pressure by pressing BAR. Next, press and release
2ND, then press UNITS. Repeating these steps cycles through the units
available for barometric pressure: inches, millimeters, hectoPascals, and millibars.
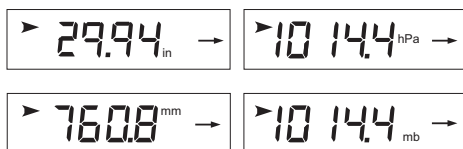
Displaying Barometric Pressure Units:
inches (in), millimeters (mm), hectoPascals (hPa) and millibars (mb)

Calibrating, Setting, and Clearing Variables

To fine-tune your station, you can calibrate most of the weather variables. For example, if your outside temperature seems consistently too high or too low, you can enter an offset to correct the deviation.

Calibrating Temperature And Humidity

You can calibrate inside and outside temperature; inside and outside humidity on your Vantage Vue.

1. Press TEMP to select the temperature variable to be calibrated. See "Inside and Outside Temperature" on page 18.
2. Press and release 2ND, then press and hold SET. After a moment, the variable you've selected begins to blink. Keep holding SET until the Calibration Offset message displays in the Weather Center.
3. Press the + or - keys to add or subtract from the temperature offset value. Inside and outside temperature are calibrated in 0.1° F or 0.1° C increments, up to a maximum offset of + or -12.7 (°F or °C). The variable will change value and the Weather Center shows the offset you've entered.
4. Press DONE to exit calibration.

Calibrating Wind Direction Reading

The wind vane is calibrated at the factory to be accurate when the solar panel above it is pointing south. If your solar panel does not point south, you can use this procedure to correct the wind direction.

Note: Wind direction calibration must be done with the ISS mounted in its final position.

1. With the wind vane stationary, ascertain its actual direction. Compare it to the direction reading on the console.
2. Press WIND until the wind direction in degrees is displayed.
3. Press and release 2ND, then press and hold SET. The wind direction variable will begin to blink.
4. Continue holding the key until "CAL" displays in the Weather Center. The Weather Center displays the previously set wind direction calibration value, if one has been set.
5. Change the value of the wind direction in the compass rose based on the direction the anemometer is currently pointing. Due north is 360°, east is 90°, south is 180° and west is 270°.
6. Press the < and > keys to select digits in the anemometer's current reading.
7. Press the + and - keys to set the anemometer reading.
8. Press DONE to exit calibration.
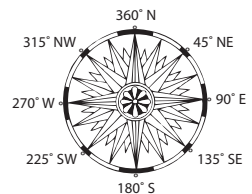
Note: Wind direction can not be corrected on the Vantage Vue ISS, Vantage Pro2 ISS or Anemometer Transmitter kit by repositioning the wind vane.

Calibrating Barometric Pressure

Before calibrating the barometric pressure, be sure the station is set to the correct elevation. See "Screen 10: Elevation" on page 11 for more information. Find the nearest source of barometric pressure, such as a local airport, to get a current barometric pressure.

1. Press BAR to select barometric pressure.
2. Press and release 2ND, then press and hold SET. The barometric pressure variable blinks.
3. Continue holding the key until the Weather Center reads "SET BAR".
4. Press the < and > keys to select digits in the variable.
5. Press + and - keys to add to or subtract from the digit's value.
6. Press DONE to exit calibration.

Calibrating Rain

The Rain Error in Percent refers to the measuring error of your rain collector. This is called the Rain Error percentage. To set the rain error percentage:

1. Enter Setup Mode by pressing 2ND and then SETUP.
2. Press DONE multiple times until Screen 13: Rain Collector displays. See "Screen 13: Rain Collector" on page 12 for more information.
3. Press and release 2ND and then press SET to display the RAIN ERROR IN PERCENT screen.

Rain Error in Percent

4. Press the + and - keys to add or subtract from the percent amount. A positive percentage rate adds a certain percentage to all the rain fall totals. A negative percentage rate subtracts a certain percentage from all rain fall totals. The Rain Error Percentage range is -25 to 25 percent. (Not all corrections are available, so you may have to choose the closest one.)
5. Press and hold DONE to save the setting and exit Setup Mode.

Setting Weather Variables

Setting a weather variable allows you to manually enter a total for that weather variable that accrued prior to installation of your weather station.

You can set values for the following weather variables:

- **Daily Rain** — Sets the daily rain total. Monthly and yearly rain totals are updated.
- **Monthly Rain** — Sets the total rain for the current month. Does not affect the yearly rain total.
- **Yearly Rain** — Sets the current year's rain total.
- **Daily ET (Evapotranspiration)** — Sets the daily ET total. Monthly and yearly ET totals are updated.
- **Monthly ET**— Sets the current month's ET. Does not affect yearly total.
- **Yearly ET** — Sets the current year's total ET.

To set a weather variable's value:

1. Select the variable you wish to change (either RAIN or ET).
2. Press and release 2ND, then press and hold SET. The variable blinks.
3. Keep holding SET until all digits are lit and stop flashing. Release SET; only one digit is now blinking.
4. Press the < or > keys to select digits in the value.
5. Press the + and - keys to add to or subtract from the selected digit.
6. When you are finished, press DONE to exit.

## Clearing Weather Variables Accumulations & Calibrations

The following weather variables can be cleared:

- **Wind**—Clears the wind direction calibration.
- **Barometer** — Clears any pressure offset used to calibrate the station. Clearing the barometric pressure offset value also clears the elevation setting in Setup Mode. See "Screen 10: Elevation" on page 11.
- **Daily rain**—Clearing the daily rain value is reflected in the daily rain total, the last 15 minutes of rain, the last three hours of rain sent to the forecast algorithm, the umbrella icon, and the monthly and yearly rain totals. Clear the daily rain total if the station accidentally recorded rain when the ISS was installed.
- **Monthly rain** — Clears the monthly rain total. Does not affect the yearly rain total.
- **Yearly rain** — Clears the yearly rain total.
- **Daily ET** — Clears daily ET and subtracts the old daily ET total from the monthly and yearly ET totals.
- **Monthly ET** — Clears the current monthly ET total. Does not affect the yearly ET total.
- **Yearly ET** — Clears the current yearly ET total.
- **Heating and Cooling Degree Days**— Clears the accumulated degree day total.

To clear a single weather variable:

1. Select the weather variable. (For degree days, select outside temperature, press WxCtr until degree days is displayed.)
2. Press and release 2ND, then press and hold CLEAR. The variable you've chosen blinks. Keep holding the key until the value changes to zero or, in the case of the barometer, the raw barometer value.
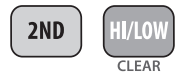
Note: Clearing the barometer value also clears the elevation setting.

Clear All Command

This command clears all stored high and low weather data, including monthly and yearly highs and lows, and clears alarm settings all at once.

1. Press WIND, making sure wind speed is displayed.
2. Press 2ND then press and hold CLEAR for at least six seconds.
3. Release CLEAR when "CLEARING NOW" displays at the bottom of the screen.

Highs and Lows Mode

The Vantage Vue records highs and lows for many weather conditions over three different periods: days, months, and years. Except for yearly rainfall, all high and low registers are cleared automatically at the end of each period.

For example, daily highs are cleared at midnight, monthly highs are cleared at month–end midnight, yearly highs are cleared at year–end midnight. You may enter the month that you would like the Yearly Rainfall accumulation to clear. The Yearly Rainfall clears on the first day of the month you have chosen. The Yearly High Rain rate clears using the same setting.

The following table lists the high and low modes for all the weather variables:

Weather Variable	High	Low	Day, Time & Date	Month	Year	Additional Information
Wind Speed	Yes		Yes	Yes	Yes	Includes direction
Outside Temperature	Yes	Yes	Yes	Yes	Yes	
Inside Temperature	Yes	Yes	Yes	Yes	Yes	
Outside Humidity	Yes	Yes	Yes	Yes	Yes	
Inside Humidity	Yes	Yes	Yes	Yes	Yes	
Barometer	Yes	Yes	Yes	Yes	Yes	
Heat Index	Yes		Yes	Yes	Yes	
Wind Chill		Yes	Yes	Yes	Yes	
Dew Point	Yes	Yes	Yes	Yes	Yes	
Rainfall Rate	Yes		Yes	Yes	Yes*	
Daily Rain			Total	Total	Total*	
Evapotranspiration			Total	Total	Total	Requires a Vantage Pro2 ISS with solar radiation sensor
* Stores yearly data for current and past years.						

Weather Data Highs and Lows

Viewing Highs and Lows
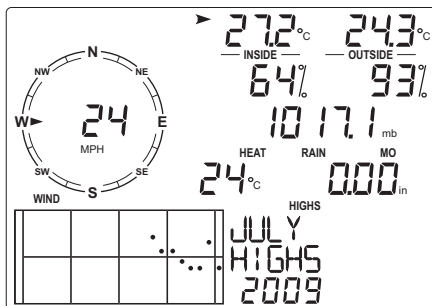
View of Monthly Highs

1. Press HI/LOW to enter the Highs and Lows Mode.

   The day of the week and "DAILY HIGHS" display in the Weather Center section of the console and the console displays the highs for all visible fields.

HI/LOW

2. Press the + and - keys to scroll through Day Highs, Day Lows, Month Highs, Month Lows, Year Highs and Year Lows.

   The information provided in the Weather Center displays the day of the week, month or year being viewed as well as indicates if the screen currently being viewed is displaying Highs or Lows. The reading's time and date, where applicable, appear in the time and date fields.

3. Press the < and > keys to scroll back and forth through the last 26 values in the graph section of the console screen.

   Pressing the < key displays the previous day's highs. Each time you press the < key, the date moves back another day. The 26 dots in the graph field also represent each of the last 26 days, months, or years; the right-most dot is the present. As you move backward and forward the flashing dot changes to show what value is being displayed.

4. Use the console navigation keys to select a different weather variable.

   The console's time displays the time of the selected variable's high or low.

5. Press DONE to exit the Highs and Lows Mode. The console screen displays the Current Weather Mode.

Note: The low reading for Wind Chill and the high reading for Heat Index are displayed in the same place. When scrolling through the high and low screens with either of these variables selected, the Wind Chill and Heat Index readings toggle on and off depending on the screen displaying. If Dew Point is selected, neither Wind Chill nor Heat will be displayed.

Alarm Mode

The Vantage Vue features 22 alarms that can be programmed to sound whenever a reading exceeds or drops below a set value. With the exception of barometric pressure and time, all alarms sound when a reading reaches the alarm threshold. For example, if the high outside temperature alarm is set at 65° F/18°C, the alarm sounds when the temperature rises to or above 65.0° F/ 18°C. A barometric pressure alarm is triggered based on trend. A time alarm is based on a preset time.

Low alarms work the same way. For example, if the wind chill threshold is set for 30°F/-1°C, the alarm condition begins when the wind chill drops to 30°F/-1°C and will continue until the wind chill rises above 30°F/-1°C.

When an alarm condition exists, the audible alarm sounds, the alarm icon blinks repeatedly, and an alarm description appears in the Weather Center at the bottom of the screen. The alarm sounds for a maximum of two minutes if the console is battery-powered, but the icon continues to blink and the message stays in the Weather Center until you clear the alarm or the condition clears. If you're using the AC adapter, the alarm will continue sounding as long as the condition exists.

The alarm will sound again for each new alarm. If more than one alarm is active, the description for each active alarm along with a "+" symbol cycles onto the Weather Center section of the screen every four seconds.

Vantage Vue Alarms

Variable	Alarms
Barometric Pressure Trend	Storm Warning - uses trend value rising rate Storm Clearing - uses trend value falling rate
Evapotranspiration*	ET Alarm - uses total ET for the day
Humidity, Inside	High and Low
Humidity, Outside	High and Low
Dew Point	High and Low
Rain	Flash Flood Alarm - uses current 15 minute rainfall total 24 Hour Rain Alarm - uses current 24 hour rainfall total
Storm	Storm Alarm - uses current storm rainfall total
Rain Rate	High
Inside Temperature	High and Low
Outside Temperature	High and Low
Heat Index Temperature	High
Wind Chill Temperature	Low
Wind Speed	High
Time & Date	The alarm sounds for 1 minute.

*Evapotranspiration measurements are only available when receiving data from Vantage Pro2 Plus stations or other Vantage Pro2 ISS stations in which a solar radiation sensor has been installed.

Special Alarms

ET (Evapotranspiration) (Optional)

ET is updated only once an hour, on the hour. If during a given hour the ET value exceeds the alarm threshold, the ET alarm sounds at the end of that hour. This is true for daily, monthly, and yearly ET alarms. You must have the optional solar radiation sensor to use this alarm. See "Evapotranspiration (ET)" on page 46 for a description of this variable.

Note: The ET Alarm is only available when the console is receiving data from a Vantage Pro2 Plus station. If your Vantage Vue console is not listening to a Vantage Pro2 Plus ISS, you cannot set an ET alarm.

Barometric Pressure

The Vantage Vue allows you to set two barometric pressure alarms: a "rise" alarm and a "fall" alarm. You may select any rate of change per three hours between 0.00 and 0.25 inches (6.35 mm) Hg, (8.5 mb, hPa). The alarm will sound if the rate of change (in either direction) exceeds the threshold you set. This alarm is updated every minute.

Setting Alarms

1. Press and release 2ND then press ALARM to enter the Alarm Mode to view or set the high alarm thresholds. The screen displays the current high

alarm thresholds. The Alarm icon displays and "HIGH ALARMS" displays in the Weather Center.

2. Press the < and >keys to select one of the variables displayed on the screen or use the console keys to select any weather variable. Also, press HI/LOW to display then toggle between the high and low alarm threshold settings.

3. Press 2ND then press SET to activate the currently selected weather variable.

4. Press the < and > keys to select digits in the threshold value.

5. Press the + and - keys to change the digit's value up and down.

6. Press DONE to finish changing the alarm setting.

7. Repeat steps 2 through 6 to change additional alarm settings.

8. Press DONE to exit Alarm Mode.

Setting the Time Alarm

1. Press and release 2ND then press ALARM to enter the Alarm Mode

   The Alarm Icon displays and "HIGH ALARMS" displays in the Weather Center.

2. Press TIME, then press and release 2ND and press SET.

   The hour digit in the time field begins blinking, displaying the current time.

3. Press the < and > keys to select between the hour digit and the minutes digits.

4. Press the + and - keys to change the digit's value up and down. To change between AM and PM, keep pressing + and - when the hour value is blinking.

5. Press DONE to exit Alarm Mode.

Clearing Alarm Settings

1. Press 2ND and ALARM to enter the Alarm Mode.

   The ALARM and HIGHS icons appear.

2. Select the alarm setting you wish to clear.

3. Press and release 2ND, then press and hold CLEAR until the setting changes to all dashes.

   You have cleared the alarm setting.

4. Press DONE to exit Alarm Mode.

Silencing Alarms

1. Press DONE to silence (but not clear) an alarm when it sounds.
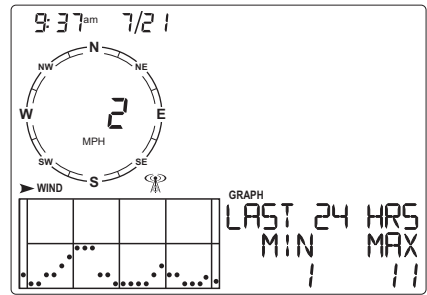
Graph Mode

The Vantage Vue console includes a powerful Graph Mode that allows you to view over 50 graphs of different weather data right on the screen, all without connecting to a personal computer.

The horizontal axis is time, showing the current and last 25 intervals (hours, days, months, or years). The vertical axis scale changes automatically to fit the information of the period graphed.

Viewing Graphs

Although the graphs available may vary for each weather variable, all are displayed in the same way.

Graph Mode for the wind variable

1. Select a variable to graph.
2. Press GRAPH to enter Graph Mode. Only the time, date, graph, graph icon, selected variable and information pertaining to the selected variable are visible. The rest of the screen is blank.

   GRAPH

   Values for the present time and each of the preceding 25 hours are displayed in the graph, each hour represented by a dot. The dot at the right end of the graph is the value for the current hour. You'll notice that the dot is blinking. The dot at the left end of the graph is the value at least 24 hours ago.
3. Press the < key and the second dot from the right starts to blink.

   The screen displays the new dot's value. The time display shows what hour is being viewed.
4. Press the < and > keys to view the variable's high values for each of the last 25 hours.
5. Press the + and - keys to shift the graph's time span.

   If you press the - key, the graph shifts from the current and last 25 hours to the current and last 25 days. Each dot represents the high recorded on the day shown in the date field. To see the lows recorded in the current and last 25 days, press HI/LOW. Press the < and > keys to move between days.

   By pressing the - key again, the graph shifts to show the highs of the current and last 25 months. As before, use the < and > keys to move between months. Press HI/LOW to shift between the highs and lows.

   By pressing the - key again, the graph shifts one more time to show the highs of the current and last 25 years, but only for Rain Rate, Rain, and ET.

   The console beeps when you've reached the first or last possible value or time span for the graph. Since the console only graphs data collected by the station, graphs can only show data collected since the station was installed.

View graphs of all other variables the same way.
1. Select the variable you want to view.
2. Press GRAPH.
3. Use the < and > keys to select different values.
4. Press the + key to shorten the time range.
5. Press the - key to lengthen the time range.
6. Press HI/LOW to shift between highs and lows.
7. Press DONE to exit.

Vantage Vue Console Graphs

Weather Variable	Available Graphs			
	Hourly	Daily	Monthly	Yearly
Barometric Pressure	C	H, L	H, L	
Humidity, Inside	C	H, L	H, L	
Humidity, Outside	C	H, L	H, L	
Dew Point	C	H, L	H, L	
Rain	T	T	T	T
Rain Rate	H	H	H	H
ET (optional)	T	T	T	T
Inside Temperature	C	H, L	H, L	
Outside Temperature	C	H, L	H, L	
Heat Index Temperature	C	H	H	
Wind Chill Temperature	L	L	L	
Wind Speed*	A, H	H	H	
Direction of High Wind Speed		Y	Y	

Legend:
A = Average
H = Highs
L = Lows
T =Totals
Y = Yes
C = Current reading at the end of each period

* Also available: 10-Minute High Wind Speeds For Last 4 Hours; Last 26 Packets of Wind Speed.

Chapter 4

Troubleshooting and Maintenance

Vantage Vue Troubleshooting Guide

While your Vantage Vue weather station is designed to provide years of trouble-free operation, occasional problems may arise. If you are having a problem with your station, please consult this troubleshooting guide before calling Davis technical support. You may be able to quickly solve the problem yourself. Please see "Contacting Davis Technical Support" on page 52.

Note: Refer to the *ISS Installation Manual* for additional troubleshooting information.

TABLE 4-1: TROUBLESHOOTING GUIDE

	Problem	Solution
Display	Display is blank	Unit is not receiving power. Check the power adapter connections and/or replace batteries.
	Display shows dashes in place of weather data	• Station not transmitting. See ISS manual. • Console not receiving - See "Troubleshooting Reception Problems" on page 37. • A reading has exceeded the limits indicated in the specifications table.Calibration numbers may be causing readings to exceed display limits. Check calibration number and adjust if necessary.
	Console is sluggish or does not work at low temperatures	The console and display may not work below 32° F (0° C). Use an external temperature sensor in low-temperature locations or install the console indoors.
	Display "locks up"	Reset the console by removing AC and battery power then restoring power. If this occurs frequently in an AC-powered console, plug the AC power adapter into a surge suppressor, or use batteries. (They will last up to a year.)
Humidity	Inside humidity seems too high or too low	Make sure the console is not near a humidifier or de-humidifier. Check calibration number and adjust if necessary. If inside humidity is low, and inside temperature is too high, see "inside temp" below. Also make sure the console backlight is not on.
Wind Speed	Wind speed reading seems too high or too low.	For low readings, remove wind cups and check for friction sources. Check the anemometer location. Is it sheltered from the wind? See ISS manual for additional wind speed troubleshooting information.
	Wind speed reads 0 either all the time or intermittently	The problem may be with the anemometer. Test anemometer by spinning wind cups. Check the corresponding wind fields in the diagnostic screens and call technical support.
WindDirection	Wind direction reading is dashed out	Check reception. See Reception Problems below.
	Wind direction always says north	Could be an ISS problem, especially if outside temperature is dashed out as well. See the ISS manual for troubleshooting information

TABLE 4-1: TROUBLESHOOTING GUIDE

	Problem	Solution
Dew	Dew Point reading seems too high or too low	Check calibration numbers for temperature. Dew point depends on outside temperature and humidity. Make sure both sensors are working.
Temperature	Outside temperature reading seems too high	Check calibration number and adjust if necessary. The ISS may need to be relocated away from radiant heat sources. See the *ISS Installation manual*.
Temperature	Inside temperature sensor reading seems too high	Move the console out of direct sunlight. Make sure the console or sensor is not in contact with an exterior wall that heats up in sunlight or when outside temperature rises. Make sure the console or sensor is not near a heater or other internal heat source (lamps, appliances, etc.). Check calibration number and adjust if necessary.
Temperature	Outside temperature seems too low	Check calibration number and adjust if necessary. Sprinklers may be hitting the ISS radiation shield. Relocate. See ISS manual.
Temperature	Inside temperature sensor reading seems too low	Make sure the console temperature sensor is not in contact with an exterior wall that cools down when outside temperature drops. Make sure the console temperature sensor is not near an air-conditioning vent. Check calibration number and adjust if necessary.
Chill	Wind chill reading seems too high or too low	Check calibration numbers for temperature. Wind chill depends on temperature and wind speed. Make sure they're working.
Heat	Heat Index reading seems too high or too low	Check calibration numbers for temperature. The heat index depends on temperature and outside humidity. Make sure the sensors are working.
Rain	No rain readings	Make sure the rain funnel is not clogged with debris. See the ISS manual.
Time	Incorrect times for sunrise and sunset	Check your latitude, longitude, time zone, and daylight saving time settings. Sunrise and sunset times are calculated from the console using all of these settings.

Troubleshooting Reception Problems

While we have tested the Vantage Vue radio extensively, each site and each installation presents its own issues and challenges. Obstructions, particularly metallic ones, can cut down your station's reception distance. Be sure to test reception between the console and ISS in the locations you intend to install them before permanently mounting your ISS.

The console's reception status displays as an antenna icon above the graph portion of the console screen

- The antenna icon displays with waves flashing around it when the console is receiving data from the ISS.
- The antenna icon displays alone when the console is trying to re-establish a lost connection. When no data packets have been received for 10 minutes, the console dashes-out any missing sensor readings.
- The antenna icon disappears when the connection between the ISS and console is lost. The console tries for 10 minutes to re-establish a connection, then stops trying to connect with the ISS for 15 minutes, and then redisplays the antenna alone

while it tries to re-establish a connection with the ISS. Enter and exit Setup Mode to re-display the antenna icon and manually force the console to re-establish a connection with the ISS.

Check Console Reception

Enter Setup Mode by pressing and releasing 2ND and pressing SETUP. Keep pressing DONE until the Receiving From screen displays. (See "Screen 5: Active Transmitters" on page 8 for more information.) Wait a few minutes while the console lists all the stations transmitting within range. If the console does not detect your transmitter, check the following:

- Adjust the console antenna so that it is vertical and in line of sight the Vantage Vue ISS antenna.

Note: The ISS antenna for the Vantage Vue can not be adjusted. Ensure that the console antenna is vertical.

- Check the ISS and transmitter ID numbers. See"Screen 6: Configuring Transmitter IDs" on page 9.
- Try reducing or increasing the distance between the ISS and the console. They should be at least 10 feet /3 meters apart. Maximum range is 1000' (300m).

Refer to the *ISS Installation Manual* for instructions on how to check the station for potential transmission problems.

Console Diagnostic Mode

In addition to logging weather data, the console continuously monitors the station's radio reception. You may find this information very helpful, especially when you are choosing locations for your console and ISS.

The Console Diagnostics Mode consists of two screens, the Statistical Diagnostic Screen and the Reception Diagnostic Screen.

Note: Radio transmission data used by the diagnostic screens clears each day at midnight, except for good packet graph data. Diagnostic screens are also cleared if you change your ID or go into the Setup Mode.

Diagnostic Screen Commands

- Press and hold TEMP, then press HUM to display the Statistical Diagnostic screen.
- Press 2ND and then press CHILL to toggle between the Statistical and Reception Diagnostic screens.
- Press DONE to exit the diagnostic screens.
- A degree (°) sign displays to the right of the last digit in Value 3 (in the area of the compass rose, see illustration below) of the Reception Diagnostic screen (Screen 2) to differentiate which screen is currently displayed.

Screen 1: Statistical Diagnostic Screen

The Statistical Diagnostic Screen displays information about how well data is being received from the weather station to the console. The information that is displayed in this screen includes:
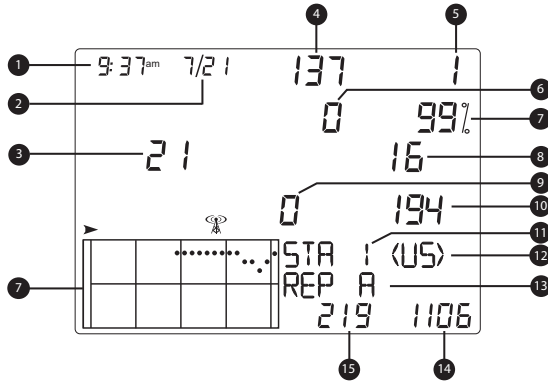
Note: Several of these values, with a *, are used by Davis engineers.

1. Time of day or number of times the anemometer reed switch was seen closed*. The reed switch closes once each revolution of the anemometer wind cups. Press WIND to toggle between these two values.
2. Date or the number of times the anemometer reed switch was seen open*. Press WIND to toggle between these two values.

Note: The time and date displays can be toggled in both statistical and reception diagnostic screens.

3. Number of packets containing received "Cyclical Redundancy Check" (CRC) errors. The system runs a CRC check on data packets. Any data packets that don't pass this check are considered to contain errors and are discarded. These are considered bad packets. This also includes the CRC errors received during radio acquisition.
4. The firmware version currently installed on the console.
5. Maximum number of bad packets in a row without resynchronization.
6. Number of times the console resynchronized with the transmitter. The console will attempt to resynchronize with the station after 20 consecutive bad packets.
7. Percentage of good packets received. Graph shows the current and last 25 days of good packet percentage data. The scale is fixed at 10% per dot.
8. The total number of bad data packets including missed packets and CRC errors. Missed packets are described as when a data packet is expected, but is not recognized as a data packet by the console. This does not include bad packets received during acquisition.
9. Current streak of consecutive bad packets. The counter increments when the console is synchronized but the packet is bad. This value is reset to zero when a good packet is received.
10. Current streak of consecutive good packets received.

11.Station Number

12.Transmitter Domain

13.Repeater ID currently communicating with the console. If a repeater or group of repeaters is used to relay station information to the console, the Repeater ID displayed is the repeater that the console is set to receive. If the console is not listening to repeaters, this section remains blank.

14.Total number of good packets received.

15.Longest streak of consecutive good packets.

Screen 2: Reception Diagnostic Screen

The Reception Diagnostic screen displays information pertinent to the console's wireless reception. To view this screen from the Statistical Diagnostic screen, press 2ND and then press CHILL. The degree sign displaying to the right of the last digit in Value 1 (see illustration below) verifies that the Reception Diagnostic screen is currently displayed.

The information that is displayed in this screen includes:
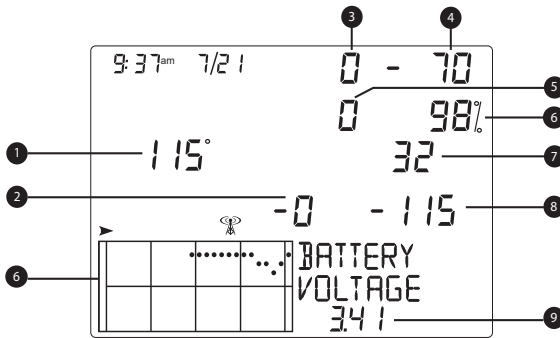
1. 8-bit timer value of next reception.[*]
2. Radio frequency error of the last packet received successfully. The ideal number should be zero after frequency correction is added. This value affects the value of #3.
3. Current frequency correction factor. Shows the frequency adjustment to the console.
4. Signal strength of the last packet received. The values displayed in this field show the received signal strength in dBm power. A more negative number means the signal strength is weaker while a less negative number means the signal strength is stronger. (Range: -100 to -20.) If a packet is not received successfully, the signal strength field is dashed out (--).
5. The number of times that the Phase Lock Loop did not lock.[*]
6. Percentage of good data packets. Graph shows the current and last 25 days of good packet percentage data. The scale is fixed at 10% per dot.
7. Frequency index of the next packet to be received.[*]
8. Background noise level. This refers to the signal level that the console hears while it is not listening to a transmitter. Background noise is displayed as power level in

dBm. The more negative the number is, the lower the background noise is. (Typically, this number should be about 15 lower than signal strength.)

9. Current console battery voltage. Ignore this value if using only an AC adapter to power the console. The value is dashed out (--) if no batteries are installed.

Console Maintenance

Changing Batteries

Use this procedure to change console batteries without losing any stored weather data or console configuration settings.

1. Plug in the AC adapter or, if the AC adapter is not present.
2. Enter Setup Mode by pressing and releasing 2ND and pressing SETUP.
   Entering Setup Mode makes sure the station isn't writing any data to memory when power is removed.
3. Remove the battery cover located on the back of the console by pressing down on the two latches at the top of the cover.
4. In the top battery compartment, insert a fingertip between the battery and the notched end of the compartment and remove the battery.
5. Repeat the process for the batteries in the bottom battery compartment.
6. Install the new batteries. (See "Installing Batteries" on page 3.)
7. Replace the battery cover and remove the AC power adapter, if desired.

Console Firmware Versions

From time to time Davis engineers update the Vantage Vue console firmware. View the firmware version in Value 4 in the Statistical Diagnostic screen, or by pressing and holding DONE and + from the Current Weather Mode screen.

You can check the firmware version currently available and download, at no charge, the newest firmware to your console on the Weather Software Support section of our website (http://www.davisnet.com/support). A WeatherLink data logger is required to update the firmware into the console.

One Year Limited Warranty

For details on our warranty policy, please refer to the *Maintenance, Service, and Repair Information* brochure included with your station.

Contacting Davis Technical Support

If you have any questions, or encounter problems installing or operating your Vantage Vue weather station, please contact Davis Technical Support. We'll be glad to help.

(510) 732-7814 — Monday - Friday, 7:00 a.m. - 5:30 p.m. Pacific Time. We are unable to accept collect calls.

(510) 670-0589 — Technical Support Fax.

support@davisnet.com — E-mail to Technical Support.

info@davisnet.com — General e-mail.

www.davisnet.com — Davis Instruments website.

See the Weather Support section for copies of user manuals, product specifications, application notes, and information on software updates. Watch for FAQs and other updates.

Appendix A
Weather Data

Refer to this appendix to learn more about the weather variables that are measured, displayed, and logged by your Vantage Vue station. The following variables are arranged below in the order they are viewed on the console screen: left to right, top to bottom, starting with time.

Time

A built-in clock and calendar track the time and date. The console automatically adjusts for daylight saving time and leap year in most of North America, and Europe (and allows manual adjustment elsewhere). The console also displays the sunrise and sunset times based on the latitude and longitude, time and date, and your time zone/ UTC offset.

Moon Phases

The moon phase icons and moon phase description in the Weather Center section of console screen are calculated based on latitude and longitude, time and date and your time zone/UTC Offset. The following table displays the moon phase for the Northern and Southern Hemispheres.

Icon: Northern Hemisphere	Moon Phase Description in the Weather Center	Icon: Southern Hemisphere
◑	NEW MOON	◑
◐	WAXING CRESCENT MOON	◑
◐	FIRST QUARTER MOON	◑
◐	WAXING GIBBOUS MOON	◯
◯	FULL MOON	◯
◯	WANING GIBBOUS MOON	◐
◑	LAST QUARTER MOON	◐
◑	WANING CRESCENT MOON	◑

Forecast

The forecast icons show what weather conditions may occur within the next 12 hours. The console generates a weather forecast based on the barometric reading and trend; wind speed and direction; rainfall; temperature; humidity; latitude and longitude; and time of year. The forecast is updated once an hour, on the hour and requires three hours of data. Predictions are made for cloud cover and the likelihood of precipitation.

Forecast Icon	Description of Forecasted Weather
	Mostly clear
	Partly cloudy
	Mostly cloudy
	Rain likely
	Snow likely
	Rain possible but not likely
	Snow possible but not likely
	Rain, freezing rain, sleet and/or snow likely
	Rain, freezing rain, sleet and/or snow possible but not likely

Wind

The anemometer measures wind speed and direction, and is part of the Integrated Sensor Suite (ISS). The console calculates a 2-minute average wind speed, a 10-minute average wind speed and 10-minute dominant wind direction. The 10- and 2-minute average wind speed is displayed in the Weather Center whenever wind has been selected on the console. The last six 10-minute dominant wind directions are included in the compass rose wind display.

Beaufort Scale

The Beaufort Scale is an empirical measure for describing wind speed which ranks wind speeds in classes. The Beaufort Scale classification for the current wind condition is listed in the Weather Center when WIND is pressed and WxCEN is pressed several times. See "Wind Speed and Direction" on page 17 for more information.

Wind Speed	Beaufort Number	Description
0 -1 mph; (0 -1.6 kph)	0	Calm
1-3 mph; (1.6 - 4.8 kph)	1	Light Air
3 - 7 mph; (4.8 - 11.3 kph)	2	Light Breeze
7 -12 mph; (11.3 - 19.3 kph)	3	Gentle Breeze
12 - 18 mph; (19.3 - 29.0 kph)	4	Moderate Breeze
18 - 24 mph; (29.0 - 38.6 kph)	5	Fresh Breeze
24 - 31 mph; (38.6 - 49.9 kph)	6	Strong Breeze
31 - 38 mph; (49.9 - 61.2 kph)	7	Near Gale
38 - 46 mph; (61.2 -74.1 kph)	8	Gale
46 - 54 mph; (74.1 - 86.9 kph)	9	Severe Gale
54 - 63 mph; (86.9 - 101.4 kph)	10	Storm
63 - 73 mph; (101.4 - 117.5 kph)	11	Violent Storm
73 mph or above; (117.5 kph)	12	Hurricane

Temperature

The ISS houses the outside temperature sensor in a vented and shielded enclosure that minimizes solar radiation induced temperature error. The console houses the inside temperature sensor.

Humidity

Humidity itself simply refers to the amount of water vapor in the air. However, the total amount of water vapor that the air can contain varies with air temperature and pressure. Relative humidity takes into account these factors and offers a humidity reading which reflects the amount of water vapor in the air as a percentage of the amount the air is capable of holding. Relative humidity, therefore, is not actually a measure of the amount of water vapor in the air, but a ratio of the air's water vapor content to its capacity. When we use the term humidity in the manual and on the screen, we mean relative humidity.

It is important to realize that relative humidity changes with temperature, pressure, and water vapor content. If a parcel of air with a capacity for 10 g of water vapor contains 4 g of water vapor, the relative humidity would be 40%. Adding 2 g more water vapor (for a total of 6 g) would change the humidity to 60%. If that same parcel of air is then warmed so that it has a capacity for 20 g of water vapor, the relative humidity drops to 30% even though water vapor content does not change.

Relative humidity is an important factor in determining the amount of evaporation from plants and wet surfaces since warm air with low humidity has a large capacity to absorb extra water vapor.

Wind Chill

Wind chill takes into account how the speed of the wind affects our perception of the air temperature. Our bodies warm the surrounding air molecules by transferring heat from the skin. If there's no air movement, this insulating layer of warm air molecules stays next to the body and offers some protection from cooler air molecules. However, wind sweeps that warm air surrounding the body away. The faster the wind blows, the faster heat is carried away and the colder you feel. Wind has a warming effect at higher temperatures.

Note: There is no windchill when the air temperature is at or above 93° F (-34° C).

Heat Index

The Heat Index uses temperature and the relative humidity to determine how hot the air actually "feels." When humidity is low, the apparent temperature will be lower than the air temperature, since perspiration evaporates rapidly to cool the body. However, when humidity is high (*i.e.*, the air is more saturated with water vapor) the apparent temperature "feels" higher than the actual air temperature, because perspiration evaporates more slowly.

Note: Heat Index and air temperature are equal at or below 0° F (-18° C).

Dew Point

Dew point is the temperature to which air must be cooled for saturation (100% relative humidity) to occur, providing there is no change in water vapor content. The dew point is an important measurement used to predict the formation of dew, frost, and fog. If dew point and temperature are close together in the late afternoon when the air begins to turn colder, fog is likely during the night. Dew point is also a good indicator of the air's actual water vapor content, unlike relative humidity, which takes the air's temperature into account. High dew point indicates high water vapor content; low dew point indicates low water vapor content. In addition a high dew point indicates a better chance of rain, severe thunderstorms, and tornados.

You can also use dew point to predict the minimum overnight temperature. Provided no new fronts are expected overnight and the afternoon relative humidity is greater than 50%, the afternoon's dew point gives you an idea of what minimum temperature to expect overnight. The higher the humidity is, the more accurate the dew point prediction.

Note: Dew Point is equal to the air temperature when the humidity is 100%.

Rain

Vantage Vue incorporates a tipping spoon rain collector in the ISS that measures 0.01" or 0.2 mm for each tip of the spoon. Your station logs rain data in the same units it is measured in and converts the logged totals into the selected display units (inches or millimeters) at the time it is displayed. Converting at display time reduces possible compounded rounding errors over time.

Four separate variables track rain totals: "rain rate," "daily rain," "monthly rain," and "yearly rain." Rain rate calculations are based on the interval of time between each spoon tip, which is each 0.01" or 0.2 mm rainfall increment.

Barometric Pressure

The weight of the air that makes up our atmosphere exerts a pressure on the surface of the earth known as atmospheric pressure. Generally, the more air above an area, the higher the atmospheric pressure. This means that atmospheric pressure changes with altitude. For example, atmospheric pressure is greater at sea level than on a mountaintop. To compensate for this difference and facilitate comparison between locations with different altitudes, atmospheric pressure is adjusted to the equivalent sea level pressure. This adjusted pressure is known as barometric pressure. In reality, the Vantage Vue measures atmospheric pressure. When you enter your location's altitude in Setup Mode, the Vantage Vue stores the necessary offset value to consistently translate atmospheric pressure into barometric pressure.

Barometric pressure also changes with local weather conditions, making barometric pressure an extremely important and useful weather forecasting tool. High pressure zones are generally associated with fair weather while low pressure zones are generally associated with stormy weather. For forecasting purposes, however, the value of the absolute barometric pressure is generally less important than the change in barometric pressure. In general, rising pressure indicates improving weather conditions while falling pressure indicates deteriorating weather conditions.

Evapotranspiration (ET)

Evapotranspiration (ET) is a measurement of the amount of water vapor returned to the air in a given area. It combines the amount of water vapor returned through evaporation (from wet surfaces) with the amount of water vapor returned through transpiration (exhaling of moisture through plant stomata) to arrive at a total. Effectively, ET is the opposite of rainfall, and it is expressed in the same units of measure (inches, millimeters).

The Vantage Vue uses air temperature, relative humidity, barometric pressure, average wind speed, and solar radiation data to estimate ET, which is calculated once an hour on the hour. Measuring ET requires that the Vantage Vue console listen to a an optional Vantage Pro2 Plus station with a solar radiation sensor installed.

Solar Radiation

What we call "current solar radiation" is technically known as Global Solar Radiation, a measure of the intensity of the sun's radiation reaching a horizontal surface. This irradiance includes both the direct component from the sun and the reflected component from the rest of the sky. The solar radiation reading gives a measure of the amount of solar radiation hitting the solar radiation sensor at any given time, expressed in Watts/sq. meter (W/m^2). Measuring solar radiation requires that the Vantage Vue console listen to an optional Vantage Pro2 Plus station with a solar radiation sensor installed. Solar Radiation is displayed in the Weather Center when ET is pressed and WxCEN is pressed multiple times.

UV (Ultra Violet) Radiation

Energy from the sun reaches the earth as visible, infrared, and ultraviolet (UV) rays. Exposure to UV rays can cause numerous health problems, such as sunburn, skin cancer, skin aging, cataracts, and immune system suppression. Measuring UV radiation requires that the Vantage Vue console listen to an optional Vantage Pro2 Plus station with a UV radiation sensor installed. The UV Index is displayed in the Weather Center when ET is pressed and WxCEN is pressed multiple times.

Appendix B
Specifications

See complete specifications for your Vantage Vue Station at our website:
www.davisnet.com.

Console Specifications

Console Operating Temperature . . . . 0° to +140°F (-18° to +60°C)

Display Temperature . . . . +32° to +140°F (0° to +60°C)

Non-Operating Temperature. . . . . below +14° or above +158°F (-10° or +70°C)

Console Current Draw . . . . 0.9 mA average, 30 mA peak, (add 120 mA for display lamps, add 0.125 mA for each transmitter station received by console) at 4.4 VDC

Power Adapter . . . . 5 VDC, 200 mA

Battery Backup . . . . 3 C-cells

Battery Life (no AC power) . . . . Up to 9 months (approximately)

Housing Material . . . . UV-resistant ABS plastic

Console Display Type . . . . LCD Transflective

Display Backlight . . . . LEDs

Dimensions:

    Console (with antenna) on table . . . . 7.5" x 5.75" x 4.5" (190 mm x 146 mm x 114 mm)

    Console (with antenna) mounted on wall. . 7.5" x 7.0" x 3.0" (190 mm x 178 mm x 76 mm)

    Display . . . . 4.13" x 3.0" (105 mm x 76 mm)

    Weight (with batteries) . . . . 1.88 lbs. (.85 kg)

Wireless Communication Specifications

Transmit/Receive Frequency . . . . US Models: 902 - 928 MHz Overseas Models: 868.0 - 868.6 MHz

ID Codes Available. 8

Output Power . . . . 902 - 928 MHz FHSS: FCC-certified low power, less than 8 mW, no license required 868.0 -868.6 MHz: CE-compliant, less than 8 mW, no license required

Range

    Line of Sight . . . . up to 1000 feet (305 m)

    Through Walls . . . . 200 to 400 feet (60 to 120 m)

Console Data Display Specifications

Historical Data . . . . Includes the past 25 values plus the current value unless otherwise noted; all can be cleared and all totals reset.

Daily Data . . . . Includes the earliest time of occurrence of highs and lows; period begins/ends at 12:00 am.

Monthly Data . . . . Period begins/ends at 12:00 am on the first of every month.

Yearly Data . . . . Period begins/ends at 12:00 am on January 1st unless otherwise noted.

Current Data . . . . Current data appears in the right-most column in the console graph and represents the latest value within the last period of the graph; totals can be set or reset.

Graph Time Interval . . . . 10 min., 15 min., 1 hour, 1 day, 1 month, 1 year (user-selectable, availability depends upon variable selected).

Graph Time Span . . . . 26 Intervals (Current interval plus 25 past values included; see Graph Intervals to determine time span).

Graph Variable Span (Vertical Scale) . . . . Automatic (varies depending upon data range); maximum and minimum value in range appear in Weather Center.

Alarm Indication . . . . Alarms sound for 2 minutes if operating on battery power. Alarm message displays in Weather Center as long as threshold is met or exceeded. Alarms can be silenced, but not cleared, by pressing DONE.

Update Interval. . . . . Varies with sensors. See "Update Interval by Sensor" on page 50. Also varies with transmitter ID code - 1 = shortest, 8 = longest.

Forecast:

Variables Used . . . . Barometric reading & trend, wind speed & direction, rainfall, temperature, humidity, latitude & longitude, time of year.

Update Interval . . . . 1 hour

Display Format . . . . Icons on top center of display; displays weather conditions that may occur for the next 12 hours;

Variables Predicted. . . . . Sky condition, precipitation, temperature changes, wind direction and speed changes.

Weather Data Specifications

Note: The following weather data specifications are listed as they are displayed on the console.

Weather Data Specifications

Variable	Resolution	Range	Nominal Accuracy (+/-)
Wind Direction	1°	0 to 360°	3°
Compass Rose	22.5°	16 compass pts.	0.13 compass pt.
Wind Speed	1 mph; 1 kt; 0.1 m/s; 1 km/h	2 to 150 mph; 2 to 130 kts 3 to 241 km/h, 1 to 67 m/s	greater of 2 mph/kts; 1 m/s; 3 km/h or 5%
Inside Temperature	0.1°F; 0.1°C	+32° to +140°F; 0 to +60°C	1°F; 0.5°C
Outside Temperature[*]	0.1°F; 0.1°C	-40° to +150°F; -40° to +65°C	1°F; 0.5°C
Inside Humidity	1%	0 to 100%	3% RH; 4% above 90%
Outside Humidity	1%	0 to 100%	3% RH; 4% above 90%
Barometric Pressure**	0.01" Hg; 0.1 mm Hg; 0.1 hPa; 0.1 mb	26" to 32" Hg; 660 to 810 mm Hg; 880 to 1080 hPa; 880 to 1080 mb[***]	0.03" Hg; 0.8 mm Hg 1.0 hPa; 1.0 mb
Barometric Trend (3 hour)	Change Rates Rapidly: ≥.06" Hg; 1.5 mm Hg; 2 hPa; 2 mb Slowly: ≥.02" Hg; 0.5 mm Hg; 0.7 hPa; 0.7 mb	5 Arrow Positions: Rising Rapidly Rising Slowly Steady Falling Slowly Falling Rapidly	
Dew Point)	1°F; 1°C	-105° to +130°F; -76° to +54°C	3°F; 1.5°C
Heat Index	1°F; 1°C	-40° to +165°F; -40° to +74° C	3°F (1.5°C)
Wind Chill	1°F; 1°C	-110° to +135°F -79° to +57°C	2°F;1°C

[*]Outside temperature accuracy is based on the temperature sensor itself and not on the sensor and the passive shielding together. The solar radiation induced error for the radiation shield: +4°F (2°C) at solar noon with the wind speed at less than or equal to 2 mph (1 ms); The higher the wind speed, the less solar radiation induced error.

**Barometric pressure readings are standardized to sea level. Elevation Range: -1500' to +15,300'; -430 to +4660 m. Note: The console screen limits display of lower elevation to -999' when using feet as elevation unit.

[***]This is the reduced value after standardizing to sea level.

Weather Data Specifications

Variable	Resolution	Range	Nominal Accuracy (+/-)
Rainfall	0.01"; 0.2 mm (1mm at totals over 2000 mm)	to 199.99"; 6553 mm	greater of 3% or 1 tip
Rain Rate	0.01"; 0.1 mm	to 40"/hr.; 1016 mm/hr.	5% when rate is under 5"/hr.; 127 mm/hr.
Evapotranspiration (ET)*	0.01"; 0.2 mm	Daily to 99.99"; 999.9 mm Monthly & Yearly to 199.99"; 1999.9mm	greater of 5% or 0.01"; 0.25 mm
Solar Radiation*	1 W/m^2	0 to 1800 W/m^2	5% of full scale
UV Index**	0.1 Index	0 to 16	5% of full scale
Time	1 min	24 hours	8 sec/Mon.
Date	1 day	month/day	8 sec/Mon.

* Console must be receiving from a Vantage Pro2 Plus or Vantage Pro2 with solar radiation sensor installed.
**Console must be receiving from a Vantage Pro2 Plus or Vantage Pro2 with UV radiation sensor installed.

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

Appendix C
Wireless Repeater Configuration

Vantage Pro2 Wireless Repeaters (#7626, #7627) or Long-Range Wireless Repeaters (#7653, #7654) can be added to increase transmission distances or improve transmission quality between a station and a console. A repeater receives information transmitted from a Vantage Vue or Vantage Pro2 station and retransmits it to a console. Depending on transmission distance, one repeater or several repeaters can be used to collect and retransmit weather data.

All consoles communicating with repeaters must be set up with the correct Transmitter ID and Repeater ID before the console can correctly receive station information.

Setting Repeater ID

To set Repeater ID on the console:

1. Press 2ND and SETUP to enter Setup Mode.
2. Press DONE to display Screen 6: Configuring Transmitter IDs.
   See "Screen 6: Configuring Transmitter IDs" on page 9 for more information on configuring Transmitter IDs.
3. Press 2ND and then WIND to turn the repeater function on and to select a Repeater ID. Pressing 2ND and WIND sets the console to receive the signal from a repeater instead of directly from a station. The first Repeater ID displayed is repeater A.
4. Press WIND repeatedly to cycle through all eight repeater IDs possible or to clear the repeater ID in the right hand corner. When no repeater ID is shown, the console is configured to listen directly to a station and not to a repeater.

   In this example, the console is set up to receive from an ISS station on transmitter ID 1 from repeater A.

   ```
   STA 1 WIND
   REPEATER A
   ```
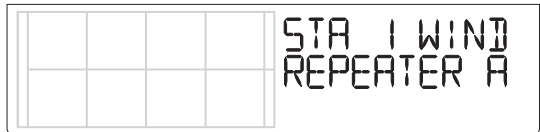
5. Press DONE to continue to the other screens in the Setup Mode, or press and hold DONE to return to the Current Weather Mode.

Clearing Repeater ID

If a repeater ID is being displayed in Screen 6 and you are not using a repeater, you must turn off the repeater function to receive station information successfully.
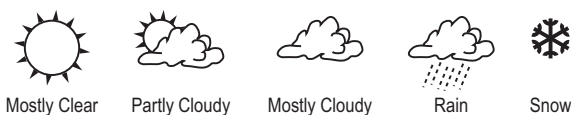
In Setup Screen 6:

Press 2ND and then press WIND repeatedly so that the console cycles through the list of repeater IDs (Repeaters A-H) until the section where the repeater ID was displayed is blank. Press DONE to continue to the next screen or press and hold DONE to return to the Current Weather Mode.
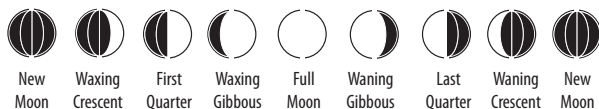
Vantage Vue Console Icons

Console icons indicate weather conditions and special functions.

Forecast

Mostly Clear   Partly Cloudy   Mostly Cloudy   Rain   Snow

Forecast icons show what weather conditions may occur for the next 12 hours.

Moon Phase

New   Waxing   First   Waxing   Full   Waning   Last   Waning   New
Moon   Crescent   Quarter   Gibbous   Moon   Gibbous   Quarter   Crescent   Moon

Shows the current moon phase. Sequence shown for Northern Hemisphere. The sequence of the icons is reversed in the Southern Hemisphere.

Alarm Bell

Flashes when an alarm is triggered. Indicates when the console is in Alarm Mode.

Graph

Appears next to the currently selected weather variable. Indicates the graphed variable on most screens.

Second Function

Appears when you press 2ND. Indicates that console key secondary functions are enabled.

Rain

Appears when the console is currently detecting rain.

Barometric Pressure Trend

Arrows show direction of pressure change for last three hours.

Contacting Davis Technical Support

If you have any questions or encounter problems installing or operating your Vantage Vue weather station, contact Davis Technical Support. We'll be glad to help.

(510) 732-7814 — Monday - Friday, 7:00 a.m. - 5:30 p.m. Pacific Time. We are unable to accept collect calls.

(510) 670-0589 — Technical Support Fax.

support@davisnet.com — E-mail to Technical Support.

info@davisnet.com — General e-mail.

www.davisnet.com — Davis Instruments web site.

See the Weather Support section for copies of user manuals, product specifications, application notes, and information on software updates. Watch for FAQs and other updates.