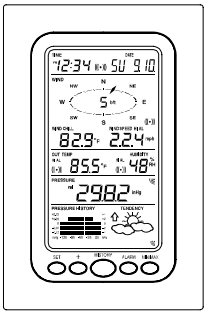
PROFESSIONAL WEATHER CENTER
WS-1510-IT

Instruction Manual



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PROFESSIONAL WEATHER CENTER
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Instruction Manual

Congratulations on purchasing this state-of-the-art Professional Weather Center as an example of excellent design and innovative technology. Featuring time, date, calendar, weather forecast, wind direction and speed, rainfall, indoor temperature, outdoor temperature and outdoor humidity, air pressure and various alarm settings for different weather conditions, this Weather Center will provide you with extensive weather information and forecast.

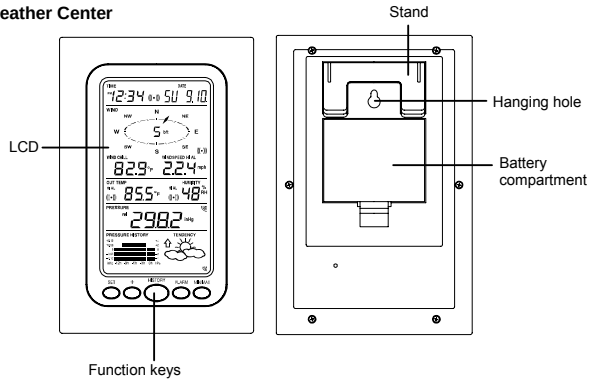
This product offers:

iT+ 915MHz INSTANT TRANSMISSION®

***INSTANT TRANSMISSION* is the state-of-the-art new wireless transmission technology, exclusively designed and developed by LA CROSSE TECHNOLOGY. *INSTANT TRANSMISSION* offers you an immediate update (every 4.5 seconds!) (6.5 seconds for rain) of all your outdoor data measured from the transmitters: follow your climatic variations in real-time!**

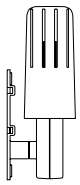
FEATURES:

Weather Center



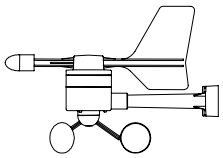
- Time display (manual setting)
- 12/24 hour time display
- Calendar display (weekday, date, month, year)
- Time alarm function
- Weather forecasting function with 3 weather icons and weather tendency indicator
- Dew point display in ºF/°C
- Outdoor temperature display in ºF/°C
- Outdoor Humidity display as RH%
- Indoor temperature display in ºF/°C
- Display MIN/MAX value of outdoor temperature, outdoor humidity, dew point, wind chill and relative pressure with time and date of recording
- Low/High outdoor temperature and humidity alarm
- Relative air pressure displayed in inHg or hPa
- Air pressure tendency indicator for the past 12 hours (bar graph format)
- LCD contrast selectable
- Low battery indicator
- Wind direction displayed in 16 steps
- Wind speed and gust displayed in mph, km/h, or m/s, and Beaufort scale
- Wind chill displayed in °F of °C
- High alarm function for wind speed
- Manual reset of outdoor temperature, outdoor humidity, dew point, wind chill, pressure, wind speed, gust, and 24h rainfall
- 24h rainfall display in inch or mm
- Total rainfall display in inch or mm
- Storm warning alarm
- Buzzer on/off selectable
- Storage of 140 sets of history weather data recorded in 3-hour intervals
- Wireless transmission at 915 MHz
- Transmission range up to 330 feet (100 meters)

Thermo-hygro Sensor



- Remote transmission of the outdoor temperature and humidity to the Weather Center at 915 MHz
- Weather-resistant casing
- Wall mounting case (to be mounted in a sheltered place. Avoid direct rain and sunshine)

Wind Sensor

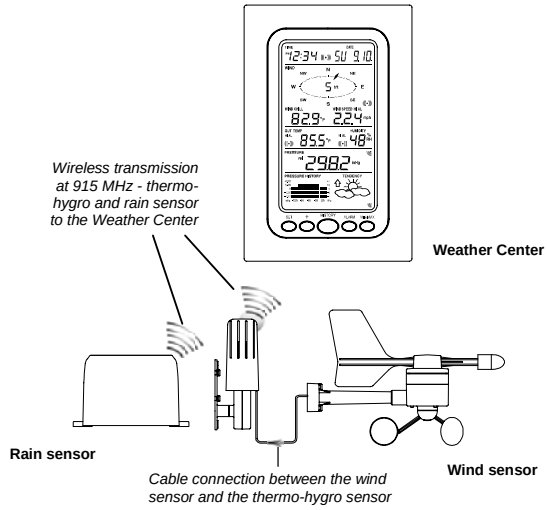


- Connected to the thermo-hygro sensor by cable
- Can be installed onto a mast or a horizontal panel

Rain Sensor

- Remote transmission of the rainfall data to the Weather Center at 915 MHz
- To be mounted onto a horizontal panel

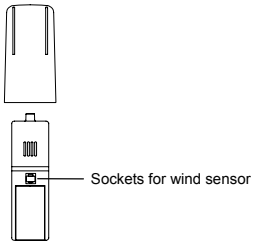
SETTING UP:



Note:

When putting the Weather Center into operation, it is important to perform in close proximity (e.g. on a table) a complete wiring and set-up of the system. This step is important to test all components for correct function before placing and mounting them at their final destinations (See **Positioning** below). Spin the wind vane and tip the rain gauge to test.

1. Unwind the cables of the Wind sensor. Connect the Wind sensor to the Thermo-hygro transmitter by plugging the connector head into the socket of the Thermo-hygro sensor. Cord should "click" into place.



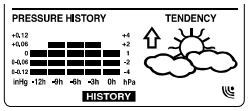
2. First insert the batteries into the Thermo-hygro sensor and Rain sensor "**How to install and replace the batteries into the Thermo-hygro sensor**" and "**How to install and replace the batteries into the Rain sensor**" below).
3. Then insert the batteries into the Weather Center (see "**How to install and replace the batteries into the Weather Center**" below**)**. Once the batteries are installed, all segments of the LCD will light up briefly and a short signal tone will be heard. It will then display the time as 12:00, the date as 1.1.05, the weather icons, and air pressure value. "- - -" will be shown for outdoor data.
4. Afterwards, the Weather Center will start receiving data from the transmitter. The transmission reception icon will be blinking to indicate that the station is trying to get the thermo-hygro transmitter data. The outdoor temperature, humidity, wind data should then be displayed on the Weather Center. If this does not happen after 135 seconds, the batteries will need to be removed from all units. You will have to start again from step 2.
5. The transmitter reception icon is now blinking again to indicate that the station is trying to get the rain sensor data. It will stop blinking once the rain sensor has been detected. If this does not happen after 135 seconds, you will need to start again from step 2.
6. You may need to check the cable for correct connection and all the components for correct function by manually turning the wind-gauge by moving the wind-vane; tilting the rain sensor to hear the impact of the internal moving seesaw, etc. (see **Positioning** below).
7. Time and date shall be manually set (See **Manual Setting** below).
8. After the Weather Center has been checked for correct function with regard to the above points and found fit, the initial set up of the weather station system is finished and the mounting of the system components can take place. It must be ensured however that all components work properly together at their chosen mounting or standing locations. If e.g. there appear to be problems with the 915 MHz radio transmission, they can be overcome by slightly changing the mounting locations or turning the base station.

Note:
The radio communication between the receiver and the transmitters in the open field reaches distances of max 330 feet, provided there are no interfering obstacles such as buildings, trees, vehicles, high voltage lines, etc.

9. Radio interferences created by PC screens, radios or TV sets can in some cases entirely cut off radio communication. Please consider this when choosing standing or mounting locations.

Note :

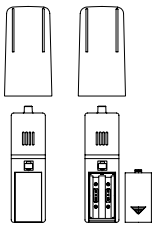
- After batteries are installed in the transmitter, install the batteries in the weather center to receive the signal from the transmitters as soon as possible. If the weather center is powered more than 5 hours after the transmitter is powered, the weather center will never receive signal successfully from the transmitters. In this case, user will need to reinstall the batteries from all the transmitters to redo set-up procedure.
- After batteries are installed, there will be synchronization between weather center and the transmitters. At this time, the signal reception icon will be blinking. When the signal is successfully received by the weather center, the icon will be switched on. (If it is not successful, the icon will not be shown in LCD) So the user can easily see whether the last reception was successful (icon on) or not (icon off). On the other hand, the short blinking of the icon shows that a reception is in progress.



Transmitter signal reception icon

- If the signal reception is not successful on the first frequency (915MHz) for 45 seconds, the frequency is changed to 920MHz and the learning is tried another 45 seconds. If still not successful, the reception is tried for 45 seconds on 910MHz. This will also be done for re-synchronization.

HOW TO INSTALL AND REPLACE THE BATTERIES INTO THE THERMO-HYGRO SENSOR



The outdoor Thermo-hygro sensor works with 2 x AA, IEC LR6 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Uninstall the rain cover of the transmitter.
2. Remove the battery compartment cover.
3. Insert the batteries, observing the correct polarity (see the marking in the battery compartment).
4. Replace the battery cover.

Note:
In the event of changing batteries in any of the units, all units need to be reset by following the setting up procedures. This is because a random security code is assigned by the thermo-hygro sensor at start-up and this code must be received and stored by the Weather Center in the first several minutes of power being supplied to it.

HOW TO INSTALL AND REPLACE THE BATTERIES INTO THE RAIN SENSOR

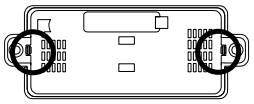


Figure 1

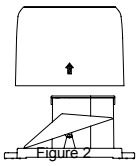


Figure 2

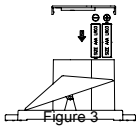


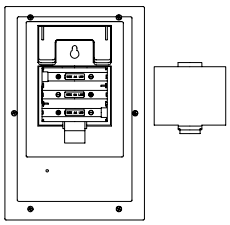
Figure 3

The rain sensor works with 2 x AAA, IEC LR3, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Press tabs back to unlock rain sensor cover. (Figure 1)
2. Lift rain sensor cover to access battery compartment. (Figure 2)
3. Insert the batteries, observing the correct polarity (see the marking in the battery compartment). (Figure 3)
4. Replace the battery cover and the rain cover onto the unit.

Note:
In the event of changing batteries in any of the units, all units need to be reset by following the setting up procedures. This is because a random security code is assigned by the rain sensor at start-up and this code must be received and stored by the Weather Center in the first several minutes of power being supplied to it.

HOW TO INSTALL AND REPLACE THE BATTERIES INTO THE WEATHER CENTER



The Weather Center works with 3 x AA, IEC LR6, 1.5V batteries. When the batteries need to be replaced, the low battery symbol will appear on the LCD. To install and replace the batteries, please follow the steps below:

1. Remove the battery compartment cover.
2. Insert the batteries observing the correct polarity (see the marking in the battery compartment).
3. Replace the battery cover.

BATTERY CHANGE:

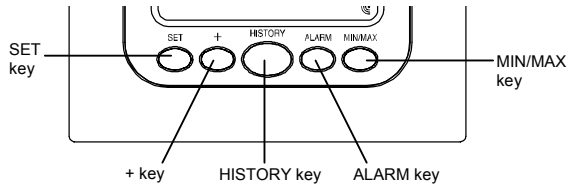
It is recommended to replace the batteries in all units every 24 months to ensure optimum accuracy of these units.

Please participate in the preservation of the environment. Return used batteries to an authorized depot.

Note:
The stored History record will not be kept after the battery change is done on the Weather Center.

FUNCTION KEYS:

Weather Center:
The Weather Center has 5 easy-to-use function keys.



SET key
- Press and hold to enter manual setting modes: LCD contrast, Manual time setting, 12/24 hour time display, Calendar setting, ºF/ ºC temperature unit, Wind speed unit, Rainfall unit, Pressure unit, Relative pressure reference setting, Weather tendency threshold setting, Storm warning threshold setting and Storm Alarm On/ Off setting
- Press to toggle between the display of Mode 1 or Mode 2:
  Mode 1: "Wind speed + outdoor temp + rel. pressure"
  Mode 2: "Gust + Dew Point temp + rainfall"
  (Mode 2 displayed will be shown for 30 seconds. Then it will return to normal display automatically.)
- In normal display mode, press and hold to switch on/ off the Buzzer
- In the weather alarm setting mode, press and hold to adjust different alarm value and switch the alarm On/ Off
- Press to activate the reset mode when max or min record is shown
- Stop the alarm during the time alarm or weather alarm ringing

+ key
- In display Mode 1, press to toggle between the display of Preset alarm time, date, weekday + date, Indoor temp, or second in the time display
- In display mode 2, press to toggle between the display of Rel. Pressure, 24 hour rainfall and Total rainfall
- Press to adjust (increase) the level of different settings
- Stop the alarm during the time alarm or weather alarm ringing
- Press to confirm to reset the max/min record

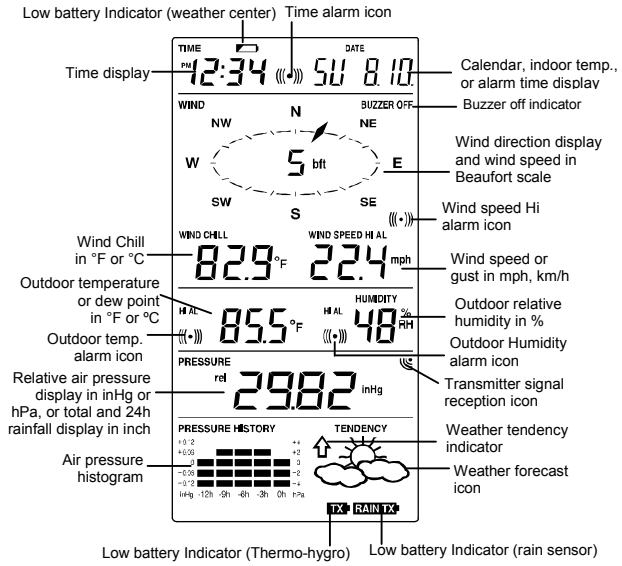
HISTORY key
- Press to display the weather data history records
- Stop the alarm during the time alarm or weather alarm ringing
- Press to exit manual setting mode and alarm setting mode

ALARM key
- Press to enter the time alarm and weather alarm setting mode
- Confirm particular alarm setting
- Press to exit the manual setting mode
- Stop the alarm during the time alarm or weather alarm ringing
- Press to exit max/ min record display mode

MIN/MAX key
- Press to display minimum and maximum records of various weather data
- Press to adjust (decrease) the level of different settings
- Stop the alarm during the time alarm or weather alarm ringing

LCD SCREEN

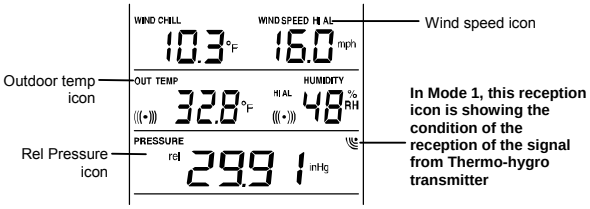
The LCD screen is split into 5 sections displaying the following information:
1. Time and date/ indoor temp/ second
2. Wind data
3. Outdoor temperature, Dew point and humidity,
4. Air pressure, Rainfall data,
5. Air pressure history and Weather forecast icon.



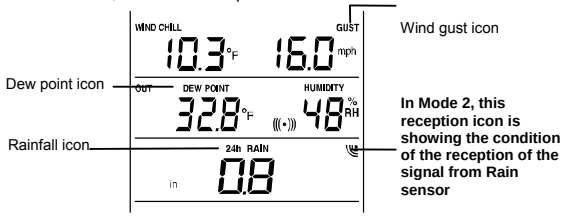
* When the signal from the transmitter/ or Rain sensor is successfully received by the Weather Station, this icon will be switched on. (If not successful, the icon will not be shown on the LCD). User can therefore easily see whether the last reception was successful ("ON" icon) or not ("OFF" icon). On the other hand, the short blinking of the icon shows that a reception is being done at that time.

*In normal display user may press the SET key shortly to toggle between Mode 1 and Mode 2 display:

Mode 1 : Wind speed, outdoor temperature and relative pressure reading are shown.



Mode 2 : Wind Gust, Dew Point temperature and 24 Hour and Total Rainfall reading are shown.

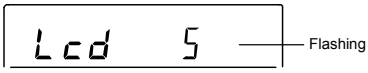


MANUAL SETTING:

The following manual settings can be changed once the SET key is pressed and hold for about 3 seconds:

- LCD contrast setting
- Manual time setting
- 12/24 hour time display
- Calendar setting
- °F/ °C temperature unit setting
- Wind speed unit
- Rainfall unit setting
- Air pressure unit setting
- Relative pressure reference value setting
- Weather tendency threshold value
- Storm warning threshold value
- Alarm On/ Off setting

LCD CONTRAST SETTING



The LCD contrast can be set within 8 levels, from "LCD 1" to "LCD 8" (default setting is LCD 5):

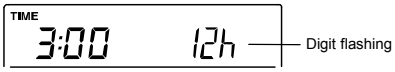
1. Press the *SET* key, the contrast level digit will start flashing.
2. Use the + or *MIN/MAX* key to adjust the level of contrast.
3. Confirm with the *SET* key and enter the **MANUAL TIME SETTING**.

MANUAL TIME SETTING:

You then may manually set the time of the clock by following the steps below:

1. The hour digit will start flashing.
2. Use the + or *MIN/MAX* key to set the hour.
3. Press the *SET* key to switch to the minutes. The minute digit will start flashing.
4. Use the + or *MIN/MAX* key to set the minute.
5. Confirm the time with the *SET* key and enter the **12/24 HOUR TIME DISPLAY SETTING**.

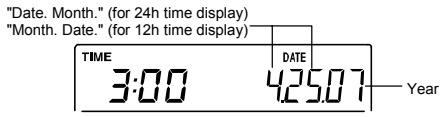
12/24 HOUR TIME DISPLAY SETTING:



The time can be set to view as 12-hour or 24-hour format. The default time-display mode is *12-h*. To set to *24-h* time display:

1. Use the + or *MIN/MAX* key to toggle the value.
2. Confirm with the *SET* key and enter the **CALENDAR SETTING**.

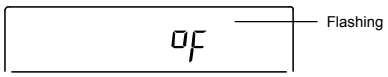
CALENDAR SETTING:



The date default of the Weather Center is 1. 1. of year 2005. The date can be set manually by proceeding as follows.

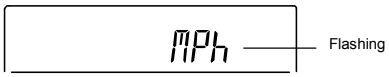
1. The year digit starts flashing.
2. Use the + or *MIN/MAX* key to set the year. The range runs from "00" (2000) to "99" (2099).
3. Press the *SET* key to confirm the year and enter the month setting. The month digit will start flashing.
4. Use the + or *MIN/MAX* key to set the month.
5. Press the *SET* key to confirm the month and enter the date setting mode. The date digit will start flashing.
6. Use the + or *MIN/MAX* key to set the date.
7. Confirm all calendar settings with the SET key and enter the **°F/°C TEMPERATURE UNIT SETTING**.

°F/°C TEMPERATURE UNIT SETTING



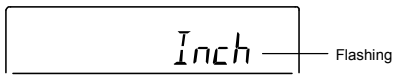
The temperature display can be selected to show temperature data in °F or °C. (default °F)
1. The temperature unit is flashing
2. Use the + or *MIN/MAX* key to toggle between "°F" or "°C".
3. Confirm with the *SET* key and enter the **WIND SPEED UNIT SETTING.**

WIND SPEED UNIT SETTING



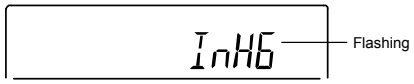
The wind speed unit can be set as mph (mile per hour), km/h (kilometer per hour), or m/s (meter per second). The default unit is mph.
1. Use the + or *MIN/MAX* key to toggle between the unit "mph", "km/h" or "m/s"
2. Confirm with the *SET* key and enter the **RAINFALL UNIT SETTING**.

RAINFALL UNIT SETTING



The rainfall unit can be set as inch or mm. The default unit is inch.
1. Use the + or *MIN/MAX* key to toggle between the unit "inch" or "mm"
2. Confirm the unit with the *SET* key and enter the **RELATIVE AIR PRESSURE UNIT SETTING**

RELATIVE AIR PRESSURE UNIT SETTING



The relative air pressure can be set as inHg or hPa. The default unit is inHg.
1. Use the + or *MIN/MAX* key to toggle between the unit "inHg" or "hPa"
2. Confirm the unit with the *SET* key and enter the **RELATIVE PRESSURE REFERENCE VALUE SETTING**.

RELATIVE PRESSURE REFERENCE VALUE SETTING

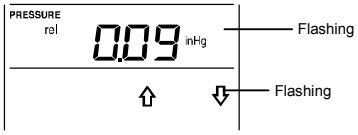
Note:
The default reference pressure-value of the barometer is 29.91inHg when batteries are first inserted. **For an exact measurement, it is necessary to first adjust the barometer to your local relative air pressure (related to elevation above sea level)**. Ask for the current atmospheric pressure of your home area (Local weather service, www, optician, calibrated instruments in public buildings, airport).

The relative air pressure can be manually set to another value within the range of 27.17 to 31.90 inHg (919 to 1080 hPa) for a better reference.

1. The current relative pressure value will start flashing
2. Use the + or *MIN/MAX* key to increase or decrease the value. Continually holding the key will allow the value to increase faster.
3. Confirm with the *SET* key and enter the **WEATHER TENDENCY SENSITIVITY VALUE SETTING**.

Note:
This feature is useful for those who live at elevations above sea level, but want their air pressure display to be based on sea level elevation.

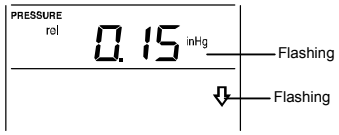
WEATHER TENDENCY SENSITIVITY LEVEL SETTING



You may select a definite switching sensitivity value, .06, .09, or .12 inHg for the change in the display of weather icons. This represents the "sensitivity" of the weather forecast (the smaller the value selected, the more sensitive the weather forecast). The default value is 0.09 inHg. Select lower numbers for high humidity areas, i.e. Oceanside. Select high numbers for arid areas, i.e. desert.
1. The sensitivity value will start flashing
2. Use the + or *MIN/MAX* key to select the value.
3. Confirm with the SET key and enter the **STORM WARNING SENSITIVITY SETTING**.

STORM WARNING THRESHOLD VALUE SETTING

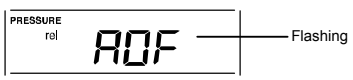
You may also define a switching sensitivity value for the Storm warning display at a decrease of air pressure from .09 inHg to .27 inHg over 6 hours (Default 0.15 inHg).



1. The sensitivity value will start flashing.
2. Use the + or *MIN/MAX* key to select the value.
3. Confirm with the *SET* key and enter the **STORM ALARM ON/OFF SETTING**.

STORM ALARM ON/ OFF SETTING

You may also choose to switch On or Off the acoustic Storm warning alarm (Default OFF).
1. The digit "AOF" will start flashing.
2. Use the + key to switch On or Off the alarm. ("AOF" = OFF; "AON" = On)
3. Confirm with the *SET* key and the normal display mode will be shown.



Note:
In case a storm warning alarm is activated, the downward weather tendency arrow will be flashing. (Also see **WEATHER TENDENCY INDICATOR** below)

TO EXIT THE MANUAL SETTING MODE

To exit the manual setting anytime during the manual setting modes, press the *ALARM* key (or *HISTORY* key) or wait for the automatic timeout. The mode will return to the normal time display.

TIME ALARM SETTING

The alarm time can be set by the use of the *ALARM* and *SET* key.

1. Press the *ALARM* key once. The “ALARM” icon and time digits are shown at the top right of the LCD.

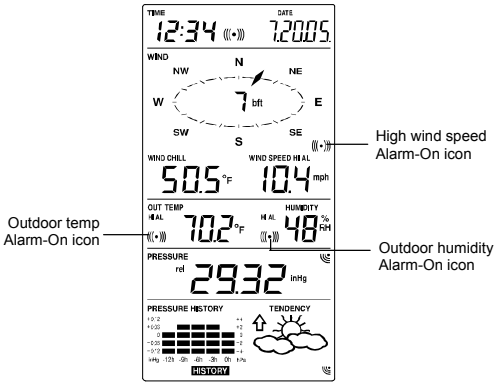
2. Press and hold the *SET* key for about 2 seconds. The hour digit of the alarm time will start flashing. Press the + or *MIN/MAX* key to set the hour of the alarm time.
3. Press the *SET* key to confirm and advance to the minute setting. The minute digit will be flashing.
4. Press the + or *MIN/MAX* key to set the minute of the alarm time. Press the *ALARM* key to confirm. Wait for about 30 seconds and the display will return to normal display mode automatically.
5. In the normal display mode, press the *ALARM* once key to go to the time alarm-setting mode again. Then press shortly the *SET* key to switch on or off the time alarm. (The showing of the icon (((•))) means that the time alarm is switched on.)
6. Press the *HISTORY* key or wait for about 30 seconds and the display will return to normal display mode automatically.

Note:

The alarm ringing duration is 2 minutes. To stop the alarm, press any key during the alarm ringing.

WEATHER ALARM OPERATIONS

The Weather alarms can be set when certain weather conditions are met according to your requirements. For example, you can set the thresholds for the outdoor temperature to +104°F (high) and 14°F (low), while only enabling the high alarm and disabling the low alarm (i.e. temperatures <14°F won’t trigger alarm, but temperatures >+104°F will).



The Weather Center can be set to alert when a specific weather condition is reached.

The following Weather Alarm settings can be adjusted in the ALARM setting mode.

- High outdoor temperature alarm
- Low outdoor temperature alarm
- High outdoor humidity alarm
- Low outdoor humidity alarm
- High wind speed alarm

Default alarm values:

Temperature	Low	32°F
	High	104°F
Relative Humidity	Low	45%
	High	70%
Wind speed	High	62.0mph

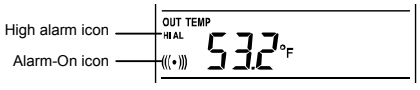
HIGH AND LOW OUTDOOR TEMPERATURE ALARM SETTING

Note:

The High and Low outdoor temperature alarm can be set On/Off independently, according to your needs.

Set the Outdoor temperature alarm value (High or Low alarm value) :

1. In the normal display mode, press the *ALARM* key twice. The High Outdoor Temperature alarm display will be shown.



2. Press and hold the *SET* key for about 2 seconds. The temperature digit will start flashing. Press the + or *MIN/MAX* key to set the high outdoor temp alarm value. (Keep holding the key will allow the value to increase faster.)
3. Press the *ALARM* key to confirm the setting. The digit will stop flashing. Press the *SET* key to switch on or off the alarm. (The showing of the icon (((•))) means that the alarm is switched on.)
4. Press the *ALARM* key once. The Low Outdoor Temperature alarm display will be shown.
5. Press and hold the *SET* key for about 2 seconds. The temperature digit will start flashing. Press the + or *MIN/MAX* key to set the low outdoor temp alarm value. (Keep holding the key will allow the value to increase faster.)
6. Press the *ALARM* key to confirm the setting. The digit will stop flashing. Press the *SET* key to switch on or off the alarm. (The showing of the icon (((•))) means that the alarm is switched on.)
7. Press the *HISTORY* key or wait for about 30 seconds and the display will return to normal display mode automatically.

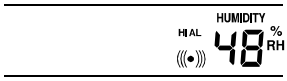
In case the temperature value meets the condition for high alarm or low alarm, the value will be blinking, along with the corresponding icon ("HI AL"/ "LO AL").
And the buzzer will ring for 2 minutes. User then may press any key to stop the ring.
User may quit the alarm setting and return to the normal display mode by pressing the *HISTORY* key.

HIGH AND LOW OUTDOOR HUMIDITY ALARM SETTING

Note:
The High and Low outdoor humidity alarm can be set On/Off independently according to your needs.

Set the Outdoor temperature alarm value (High or Low alarm value):

1. In the normal display mode, press the *ALARM* key 4 times. The High Outdoor Humidity alarm display will be shown.



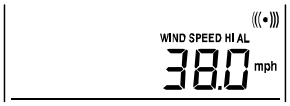
2. Press and hold the *SET* key for about 2 seconds. The humidity digit will start flashing. Press the + or *MIN/MAX* key to set the high outdoor humidity alarm value.
3. Press the *ALARM* key to confirm the setting. The digit will stop flashing. Press the *SET* key to switch on or off the alarm. (The showing of the icon (((•))) means that the alarm is switched on.)
4. Press the *ALARM* key once. The Low Outdoor humidity alarm display will be shown.
5. Press and hold the *SET* key for about 2 seconds. The humidity digit will start flashing. Press the + or *MIN/MAX* key to set the low outdoor humidity alarm value.
6. Press the *ALARM* key to confirm the setting. The digit will stop flashing. Press the *SET* key to switch on or off the alarm. (The showing of the icon (((•))) means that the alarm is switched on.)
7. Press the *HISTORY* key or wait for about 30 seconds and the display will return to normal display mode automatically.

In case the humidity value meets the condition for high alarm or low alarm, the value will be blinking, along with the corresponding icon ("HI AL"/ "LO AL"). And the buzzer will ring for 2 minutes. User may press any key to stop the sound.

WIND SPEED ALARM SETTING

The High wind speed alarm can be set by following the steps below.

1. In the normal display mode, press the *ALARM* key six times. The High wind-speed alarm display will be shown.



2. Press and hold the *SET* key for about 2 seconds. The wind speed digit will start flashing. Press the + or *MIN/MAX* key to set the high wind speed alarm value.
3. Press the *ALARM* key to confirm the setting. The digit will stop flashing. Press the *SET* key to switch on or off the alarm. (The showing of the icon (((•))) means that the alarm is switched on.)
4. Press the *ALARM* key once to return to the normal display mode.

In case the wind speed exceeds the condition for high wind speed alarm, the value will be flashing, along with the corresponding high alarm icon ("HI AL"). And the buzzer will ring for 2 minutes. User may press any key to stop the sound.

HYSTERESIS

To compensate for fluctuation of the measured data, which may cause the weather alarm to sound constantly if the measured reading is close to your set level, a hysteresis function has been implemented for each weather alarm. For example, if the high temperature alarm is set to +77°F and the current value moves to +77°F, the alarm will be activated (if it has been enabled). Now when the temperature drops to +76.8°F or below and thereafter again increases to beyond +77°F, the data will be blinking, but no alarm will be activated. It has to drop to below +75.2°F (with a pre-set hysteresis of 1.8°F) so that the alarm can be produced again. Hysteresis values for the various weather data types are given in the following table:

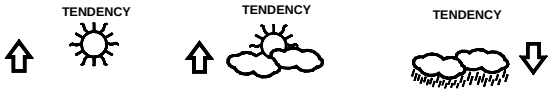
Weather data	Hysteresis
Temperature	1.8°F
Humidity	3% RH
Wind speed	3.1 mph

Note:
The temperature or humidity data will keep on flashing even after a key has been pressed to stop the alarm or buzzer has been switched off, to indicate that the current weather condition is out of the pre-set limit(s)

WEATHER FORECAST AND WEATHER TENDENCY

WEATHER FORECASTING ICONS:

Weather forecasting icons are displayed in any of the following combinations at the right bottom part of LCD:



Sunny | **Cloudy with sunny intervals** | **Rainy**

For every sudden or significant change in the air pressure, the weather icons will update accordingly to represent the change in weather.

(Every time a new average pressure value has been obtained (once per minute), this value is compared with an internal reference value. If the difference between these values is bigger than the selected weather tendency sensitivity, the weather-icon changes, either for worse or for better. In this case, the current pressure value becomes the new weather tendency reference.)

If the icons do not change, either the air pressure has not changed or the change has been too small for the Weather Center to register. So you may adjust the "sensitivity" of the pressure change checking in the setting mode –see **WEATHER TENDENCY SENSITIVITY VALUE SETTING** above.
However, if the icon displayed is a sun or raining cloud, there will be no change of icon if the weather gets any better (with sunny icon) or worse (with rainy icon) since the icons are already at their extremes.
The icons displayed forecasts the weather in terms of getting better or worse and not necessarily sunny or rainy as each icon indicates. For example, if the current weather is cloudy and the rainy icon is displayed, it does not mean that the product is faulty because it is not raining. It simply means that the air pressure has dropped and the weather is expected to get worse but not necessarily rainy.

Note:
After setting up, readings for weather forecasts should be disregarded for the next 48-60 hours. This will allow sufficient time for the Weather station to collect air pressure data at a constant altitude and therefore result in a more accurate forecast.

Common to weather forecasting, absolute accuracy cannot be guaranteed. The weather forecasting feature is estimated to have an accuracy level of about 75% due to the varying areas the Weather Center has been designed for use. In areas that experience sudden changes in weather (for example from sunny to rain), the Weather Center will be more accurate compared to use in areas where the weather is stagnant most of the time (for example mostly sunny).
If the Weather Center is moved to another location significantly higher or lower than its initial standing point (for example from the ground floor to the upper floors of a house), discard the weather forecast for the next 48-60 hours, as the Weather Center may mistake the new location as being a possible change in air-pressure when really it is due to the slight change of altitude.

WEATHER TENDENCY INDICATOR

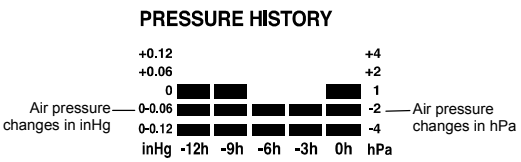
Working together with the weather icons is the weather tendency indicators (arrow located on the left and right sides of the weather icons). When the indicator points upwards, it means that the air-pressure is increasing and the weather is expected to improve, but when indicator points downwards, the air-pressure is dropping and the weather is expected to become worse.

Taking this into account, one can see how the weather has changed and is expected to change. For example, if the indicator is pointing downwards together with cloud and sun icons, then the last noticeable change in the weather was when it was sunny (the sun icon only). Therefore, the next change in the weather will be cloud with rain icons since the indicator is pointing downwards.

Note:
Once the weather tendency indicator has registered a change in air pressure, it will remain permanently visualized on the LCD.

AIR PRESSURE HISTORY (ELECTRONIC BAROMETER WITH BAROMETRIC PRESSURE TREND)

The bottom section of the LCD also shows the relative air pressure value and the air pressure history.
Depending on programming conditions, display of the history of air pressure is in the form of a graph consisting of vertical bars.
The bar graph of the electronic barometer shows the air pressure history of the past 12 hours in five 3-hour steps.



The horizontal axis represents the last 12 hours air pressure recording (-12, -9, -6, -3 and 0 hour). The bars are plotted at each of the 5 steps and give the trend over the recorded period. The scale on the right compares the result. The "0" in the middle of this scale determines the current air pressure.

The vertical axis represents the air pressure changes in inHg (+0.12, +0.06, 0, -0.06, -0.12. The “0” represents the current air pressure). The newly measured pressure was compared to the previously recorded pressure reading. The pressure change is expressed by the difference between the current ("0h") and the past readings in division of ±2 hPa or ±0.06 inHg. If the bars are rising, this indicates that the weather is getting better due to an increase in air pressure. If the bars go down it indicates a drop of the air pressure and the weather is expected to get worse from the present time "0".
At every full hour, the current air pressure is used as a basis for the display of a new graph bar. The existing graph is then moved one column to the left.

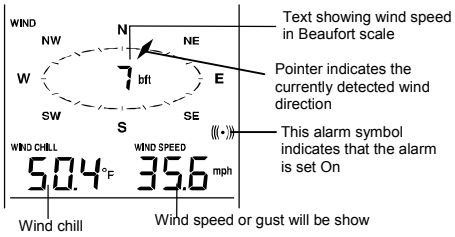
Note:
For accurate barometric pressure trend, the Weather Center should operate at the same altitude. For example, it should not be moved. Should the unit be moved, for instance from the ground to the second floor of the house, the readings for the next 48-60 hours shall be discarded.

Note: The bar graph will scroll right to left regularly to prevent LCD burnout.

WIND DIRECTION AND WIND SPEED MEASUREMENT

In normal display mode, the second section of the LCD shows the following wind data.

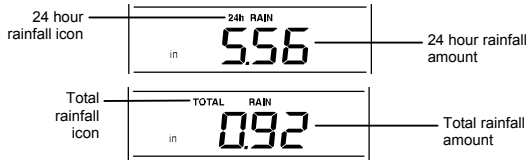
- Wind direction (shown on the a compass scale of 16 divisions) and wind speed/ gust in Beaufort scale
- Wind chill in °F or °C
- Wind Speed in km/h, mph or m/s
- Gust in km/h, mph or m/s (displayed when in Mode 2, by pressing the SET key shortly)



RAINFALL MEASUREMENT

The total rainfall and 24 hour rainfall measurement is displayed in the fourth section of the LCD, in the unit of mm or inch.
To View the 24-hour rainfall or the Total rainfall reading:

1. In normal display, press SET key once and the display will shift to Mode 2.
2. Press + key consecutively key to toggle between the 24-hour rainfall, Total rainfall and Rel. pressure reading.



VIEWING THE HISTORY DATA

The weather station can store up to 140 sets of weather data which are recorded automatically at 3-hour intervals after the weather station is powered up, at the nearest time of 0:00, 03:00, 06:00, 09:00, 12:00, 15:00, 18:00 and 21:00. For instance, if user has manually set the time as 14:52 after installing batteries, the first history record will be made at the coming 15:00 automatically. Then the second record will be on 18:00 and so on.
Each weather record includes the Wind direction, Wind speed/ gust in Beaufort scale, Wind chill temperature, wind speed/gust, dew point, Outdoor temp and humidity, relative pressure, 24-hour rainfall and total rainfall, pressure history and weather tendency. Also, the time and date of recording will be displayed.

Note:
In order to acquire the correct time of recording of the history records, you shall manually set the current time as soon as installing batteries to the weather station. Afterwards, you should avoid changing the pre-set time as it will also alter the recorded "time of recording" of each history record, which may lead to confusion.

To view the weather history:

1. In normal display, press the HISTORY key. The latest weather record will be shown with the date and time of recording. The "HISTORY" icon will be displayed at the bottom of the LCD.
2. When viewing History records, user may shift to see the Mode 1 or Mode 2 data by pressing the SET key.

(**Mode 1:** with wind speed + outdoor Temp + Rel. pressure;
Mode 2 : with wind gust + Dew point + rainfall data)

Note: If user wants to choose to view total rainfall or 24-hour rainfall in history records, he shall first in normal display choose to show the particular rainfall data, the press History key and SET key to view the particular rainfall data in History records.

3. When viewing History records, press MIN/ MAX to view older records.
   (Press MIN/MAX and + key to view "Previous" and "Next" record respectively. The records are made at 3-hour intervals)

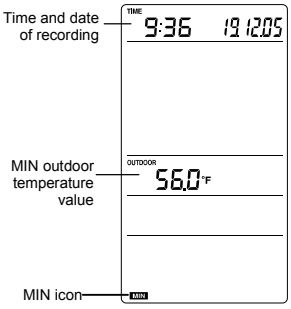
Note:

- The stored history records will not be retained after battery change or whenever battery is removed.
- The total rainfall value will be exhibited in whole number (no decimal place) in the history record.

VIEWING THE MAXIMUM/ MINIMUM WEATHER DATA

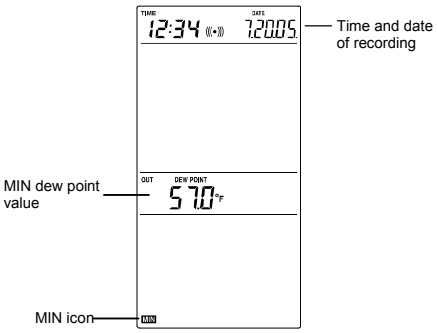
The weather station will record the maximum and minimum value of the various weather data with time and date of recording automatically. The following stored maximum and minimum weather data can be viewed by pressing the MIN/MAX key in normal display mode.

1. Min outdoor temperature with the date and time of recording



2. Max outdoor temperature with the date and time of recording

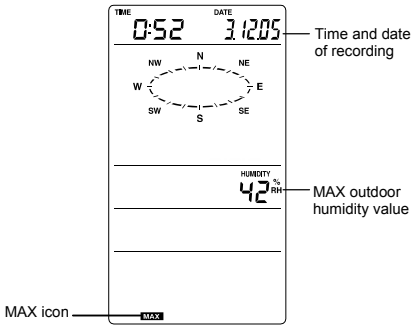
3. Min dew point temperature with the date and time of recording



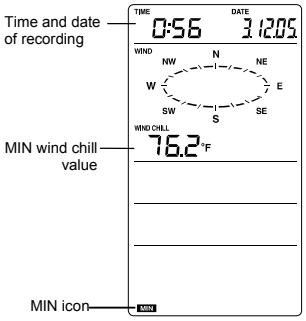
4. Max dew point temperature with the date and time of recording

5. Min outdoor humidity with the date and time of recording

6. Max outdoor humidity with the date and time of recording



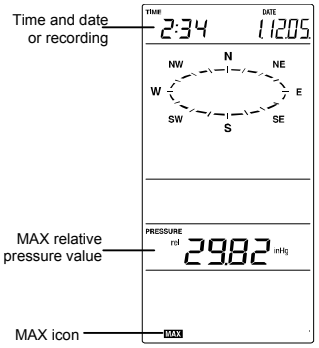
7. Min Wind chill temperature with the date and time of recording



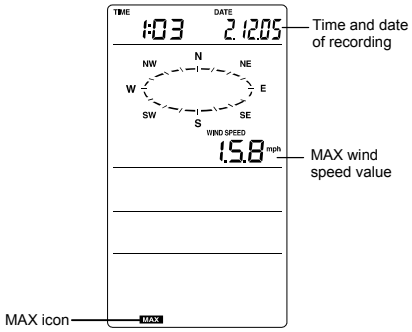
8. Max Wind chill temperature with the date and time of recording

9. Min Relative pressure with the date and time of recording

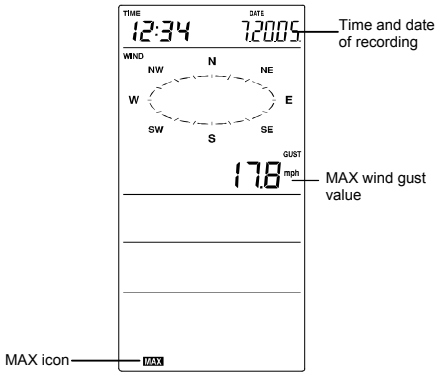
10. Max Relative pressure with the date and time of recording



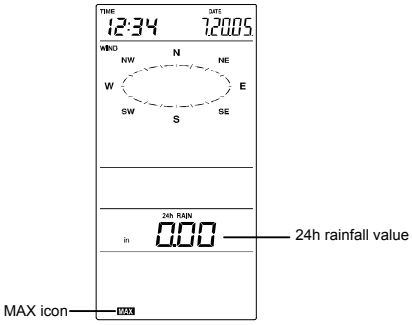
11. Maximum wind speed with the date and time of recording



12. Maximum Gust with the date and time of recording



13. Max 24 hour rainfall with the date and time of recording



RESET THE MAXIMUM AND MINIMUM WEATHER DATA

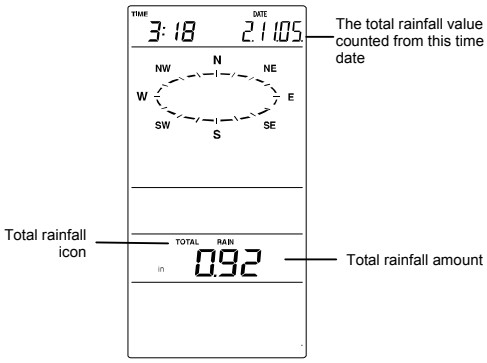
To reset the aforementioned maximum or minimum weather data 1. to 13., you shall need to reset each of the data independently.

1. Press MIN/MAX key to show the desired weather data. For instance, if you want to reset the minimum humidity, in the normal display you shall press the MIN/MAX key three times to show the min humidity value.
2. Press and hold the SET key for about 2 seconds, then the "RESET" icon will appear at the bottom part of the LCD.
3. Press the + key once, then the stored value will be reset to the current value and current time.
4. Press the ALARM key to return to normal display mode.

14. Total rainfall amount

The total rainfall measurement is displayed in the fourth section of the LCD, in the unit of mm or inch. It shows the total rainfall accumulated since last reset of the weather station.

In normal display mode, press the MIN/MAX key fourteen times to show the total rainfall value. The "RESET" icon will also be shown at the same time.



To reset the rainfall reading, press the + key once when the Rainfall value and "Reset" icon is shown. Then the total rainfall amount will be reset to 0, and the time updated to current time.

Note:

After power up, the time and date and total rainfall are displayed as "- - -". After time is adjusted manually, the set time will be shown.

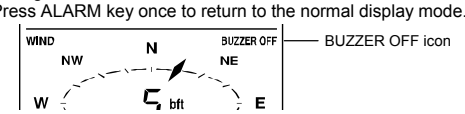
SWITCHING ON/OFF THE BUZZER

User may choose to turn off the buzzer so that when the time alarm is switched on and activated, the buzzer will not sound but we can still see the alarm icon (((•))) flashing on the LCD for time alarm.

On the other hand, when the buzzer is turned off and any weather alarm is activated, the particular weather digits will flash to show user that the weather condition is being out of the preset threshold value, yet the buzzer will not sound.

To switch off the buzzer:

1. In normal display mode, press and hold the SET key until the icon "BUZZER OFF" is shown at the right side above the Wind direction scale. The LCD will change to setting mode.
2. Press ALARM key once to return to the normal display mode. The "BUZZER OFF" icon will still be shown.



To re-enable the buzzer:

1. When the BUZZER OFF icon is shown on LCD, press and hold the SET key until the BUZZER OFF icon disappears.
2. Press ALARM key once to return to the normal display mode. The "BUZZER OFF" icon will no longer be shown. Then the alarm will sound normally.

LOW BATTERY INDICATOR

The low battery indicator of the weather station and the transmitter will be displayed at the top and bottom portion of the LCD respectively when the battery power is low. It is recommended to replace the batteries in all units on an annual basis to ensure optimum accuracy of the system.

Note:

- After battery change, both the Weather Station and the transmitters need to be reset (see note "**Setting up**")
- The History data record will be clear after the battery change.

OUTDOOR TRANSMITTER 915 MHz RECEPTION CHECK

The outdoor temperature, humidity, wind data are transmitted from thermo-hygro transmitter every 4.5 seconds; the rainfall data are transmitted from the rain sensor every 6.25 seconds. The receiver will be synchronized to the thermo-hygro transmitter and rain sensor then. The transmission range (supposedly up to about 330 feet /100 meters) of the thermo-hygro transmitter/ rain sensor may be affected by the ambient temperature. At cold temperatures, the transmitting distance may be decreased. Please keep this in mind when placing the transmitter and the rain sensor.

If (1) the outdoor data are not being received within first several minutes after setting up; (2) the outdoor display always show "- - -" on the outdoor display; or (3) the reception icon of thermo-hygro transmitter (Mode 1) and rain sensor (Mode 2) is not displayed on the display, user shall check the following points:

1. The distance of the Weather Center or transmitter/ rain sensor should be at least 5 to 6.5 feet (1.5 to 2 meters) away from any interfering sources such as computer monitors or TV sets.
2. Avoid positioning the Weather Center onto or in the immediate proximity of metal doors or window frames.
3. Using other electrical products such as headphones or speakers operating on the same signal frequency (915 MHz) may prevent correct signal transmission and reception.
4. Neighbors using electrical devices operating on the 915 MHz signal frequency can also cause interference.
5. "Visibility" of weather center and transmitters increases the range.

Note:

When the 915 MHz signal is received, do not re-open the battery compartment cover of either the transmitter/ rain sensor or Weather Center, as the batteries may spring free from the contacts and force a false reset. Should this happen accidentally then reset all units (see **Setting up** above) otherwise transmission problems may occur. During normal operation, after the outdoor display shows "- - -", the weather center will change to receive the outdoor data every 15 minutes, until the data is read. Then the reception period for thermo-hygro transmitter will return to 4.5 seconds (6.25 seconds for rain sensor).

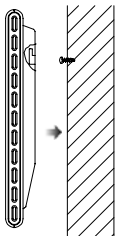
If no reception is possible despite the observation of these factors, all system units have to be reset (see **Setting up**).

POSITIONING:
Prior to permanently affixing any of the units, please ensure the following points are considered:

- Cable lengths of the units meet with your distance requirements at the point of fixing
- Signals from the sensors can be received by the base station at points of mounting

The Weather Center

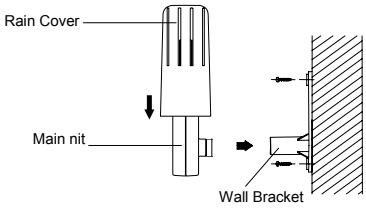
The Weather Center has been designed to be hung onto wall or free standing.



To wall mount
Choose a sheltered place. Avoid direct rain and sunshine.
Before wall mounting, please check that the outdoor values can be received from the desired locations. To wall mount:

1. Fix a screw (not supplied) into the desired wall, leaving the head extended out the by about 5mm.
2. Hang the station onto the screw. Remember to ensure that it locks into place before releasing.

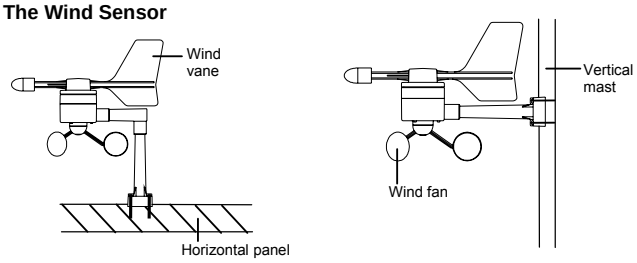
The Thermo-hygro Sensor



An ideal mounting place for the thermo-hygro sensor would be the outer wall beneath the extension of a roof, as this will protect the sensor from direct sunlight and other extreme weather conditions.

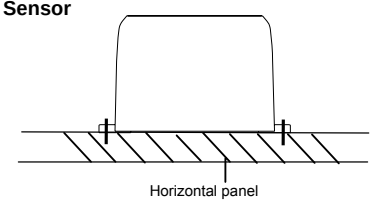
To wall mount, use the 2 screws to affix the wall bracket to the desired wall, plug in the thermo-hygro sensor to the bracket and secure both parts by the use of the supplied screw and ensure that the cables from the wind and rain sensors are correctly plugged in otherwise data transmission errors could occur.

The Wind Sensor



First, check that the wind-cups and the wind-vane can rotate freely before fixing the unit. For correct and accurate readings, it is important to mount the sensor so that the front (marked E) is pointing in East-West direction. The wind sensor should now be mounted using the screw or cable tie provided onto a solid wall/ panel mast or mast to allow the wind to travel around the sensor unhindered from all directions (ideal mast size should be from diameter 0.62" to 1.29" (16mm to 33mm). Do not over tighten. Once the wind sensor is fixed onto the mast, connect the cable to the corresponding thermo-hygro sensor socket so that operating power supply can be received and data can be transmitted to the base station. Secure cord from blowing. Do not use staples. Using PVC pipe or metal as a mast may cause static. Wood is recommended.

The Rain Sensor



For best results, the rain sensor should be securely mounted onto a horizontal surface about 39.37" (1 meter) above the ground (or higher) and in an open area away from trees or other coverings where rainfall may be reduced causing inaccurate readings.

When securing into place, check that rain excess will not collect and store at the base of the unit but can flow out between the base and the mounting surface (test by pouring clean water).

After mounting the rain sensor and placing battery, the rain sensor is now operable. For testing purposes, very slowly pour a small amount of clean water into the rain sensor funnel. The water will act as rainfall and will be received and displayed at the base station i.e. when the reading interval is reached.

Note:
You will need to be able to access your rain gauge periodically to clean debris and possible insect nests. Please keep this in mind when mounting.

LA CROSSE TECHNOLOGY SENSOR EXTENSION CABLE

When you require additional length to properly mount your sensor, you can use a La Crosse Technology extension cable. The extension cable is 32 feet in length and comes with the appropriate connecter attached. Please visit your local retailer or www.greatbigoutlet.com to purchase.

Phone cable and connections have much more resistance than our extension cable and is not recommended for use. Using phone cable/connection may damage your sensors.

Note: Using extension cables will shorten battery life.

Warning: Never cut, splice, shorten or modify your sensor cables or extension cables. Doing so may damage your sensors and will void you Warranty.

CARE AND MAINTENANCE:

- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the unit and give inaccurate forecasts and readings.
- Precautions shall be taken when handling the batteries. Injuries, burns, or property damage may be resulted if the batteries are in contact with conducting materials, heat, corrosive materials or explosives. The batteries shall be taken out from the unit before the product is to be stored for a long period of time.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended type.
- When cleaning the display and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCD and casings.
- Do not submerge the unit in water.
- Special care shall be taken when handling a damaged LCD display. The liquid crystals can be harmful to user's health.
- Do not make any repair attempts to the unit. Return them to their original point of purchase for repair by a qualified engineer. Opening and tampering with the unit may invalidate their guarantee.
- Never touch the exposed electronic circuit of the device as there is a danger of electric shock should it become exposed.
- Do not expose the units to extreme and sudden temperature changes, this may lead to rapid changes in forecasts and readings and thereby reduce their accuracy.

SPECIFICATIONS:

Temperature measuring range:
Indoor : 32°F to +140°F with 0.2°F resolution
0ºC to +59.9ºC with 0.1ºC resolution
("OF.L" displayed if outside this range)
Outdoor / dew point : -40°F to +140°F with 0.2°F resolution
-40ºC to +59.9ºC with 0.1ºC resolution
("OF.L" displayed if outside this range)
Relative humidity measuring range:
Outdoor : 1% to 99% with 1% resolution
("- -" displayed if < 1%, "99" displayed if ≥ 99%)
Wind speed/ gust : 0 to 111.8 mph (0 to 50 m/s)
(displayed "OF.L" when > 111.8 mph; 50m/s)
Wind chill/ dew point: -40°F to +140°F (-40ºC to +59.9ºC)
(displayed "OF.L" if outside this)
Relative pressure pre-set range : 27.17 to 31.90 inHg (919 to 1080 hPa)
24h rainfall : 0" to 39.36" (0 to 999.9 mm)
(displayed "OF.L" when > 999.9mm)
Total rainfall : 0" to 393.6" (0 to 9999 mm)
(displayed "OF.L" when > 9999mm)
Outdoor data reception : every 4.5 seconds (from thermo-hygro transmitter)
every 6.25 seconds (from rain sensor)
Air pressure checking interval: every 15 seconds
Transmission range : up to 330 feet (100 meters) in open space
Power consumption:
Weather Center : 3 x AA, IEC LR6, 1.5V
Thermo-hygro transmitter : 2 x AA, IEC LR6, 1.5V
Rain sensor : 2 x AAA, IEC LR3, 1.5V
Battery life : approximately 24 months (Alkaline batteries recommended)
Dimensions (L x W x H):
Weather Center : 4.59" x 0.94" x 7.01"
(116.8 x 24 x 178.1mm)
Thermo-hygro transmitter : 2.25" x 2.44" x 6.18"
(57.3 x 62 x 157mm)
Wind sensor : 9.84" x 5.74" x1087"
(250 x 145.9 x 276.2mm)
Rain sensor : 5.67" x 2.15" x3.46"
(144 x 54.6 x 88mm)

LIABILITY DISCLAIMER

- The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.
- Please contact your local or/and regional authorities to retrieve the addresses of legal dumping grounds with selective collection.
- All electronic instruments must from now on be recycled. User shall take an active part in the reuse, recycling and recovery of the electrical and electronic waste.
- The unrestricted disposal of electronic waste may do harm on public health and the quality of environment.
- As stated on the gift box and labeled on the product, reading the "User manual" is highly recommended for the benefit of the user. This product should not be thrown in general rubbish collection points.
- The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.
- This product is designed for use in the home only as indication of the temperature.
- This product is not to be used for medical purposes or for public information.
- The specifications of this product may change without prior notice.
- This product is not a toy. Keep out of the reach of children.
- No part of this manual may be reproduced without written authorization of the manufacturer.

WARRANTY INFORMATION

La Crosse Technology, Ltd provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased and used in North America and only to the original purchaser of this product. To receive warranty service, the purchaser must contact La Crosse Technology, Ltd for problem determination and service procedures. Warranty service can only be performed by a La Crosse Technology, Ltd authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to La Crosse Technology, Ltd or La Crosse Technology, Ltd's authorized service center.

La Crosse Technology, Ltd will repair or replace this product, at our option and at no charge as stipulated herein, with new or reconditioned parts or products if found to be defective during the limited warranty period specified above. All replaced parts and products become the property of La Crosse Technology, Ltd and must be returned to La Crosse Technology, Ltd. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer. La Crosse Technology, Ltd will pay all expenses for labor and materials for all repairs covered by this warranty. If necessary repairs are not covered by this warranty, or if a product is examined which is not in need or repair, you will be charged for the repairs or examination. The owner must pay any shipping charges incurred in getting your La Crosse Technology, Ltd product to a La Crosse Technology, Ltd authorized service center. La Crosse Technology, Ltd will pay ground return shipping charges to the owner of the product to a USA address only.

Your La Crosse Technology, Ltd warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (including the lack of reasonable and necessary maintenance); (2) damage occurring during shipment (claims must be presented to the carrier); (3) damage to, or deterioration of, any accessory or decorative surface; (4) damage resulting from failure to follow instructions contained in your owner's manual; (5) damage resulting from the performance of repairs or alterations by someone other than an authorized La Crosse Technology, Ltd authorized service center; (6) units used for other than home use (7) applications and uses that this product was not intended or (8) the products inability to receive a signal due to any source of interference.. This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

LA CROSSE TECHNOLOGY, LTD WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT. THIS PRODUCT IS NOT TO BE USED FOR MEDICAL PURPOSES OR FOR PUBLIC INFORMATION. THIS PRODUCT IS NOT A TOY. KEEP OUT OF CHILDREN'S REACH.

This warranty gives you specific legal rights. You may also have other rights specific to your State. Some States do no allow the exclusion of consequential or incidental damages therefore the above exclusion of limitation may not apply to you.

FAQ WS-1510-IT

Congratulations on purchasing this state-of-the-art Professional Weather Center.
Remember, for your Weather Station to work properly, it must be started correctly, using good quality alkaline batteries, and the time must be set manually.
Before calling for technical support (1-888-211-1923), you may be able to correct the problem by first performing a Proper Restart, an Initial Set-up, and problem-solving with the trouble-shooting guide.

-Proper Restart (Quick Set-up Guide)
-Mounting Sensors
– Program Set Up
--Indoor Temperature Readings
– Outdoor Temperature/Humidity Readings
--Wind Readings
--Rain reading
– Minimum and Maximum Readings
--Alarms
--History
– Forecast Icons
-Display information
– Power Source

FIRST THINGS FIRST, OR BATTERIES, BATTERIES, BATTERIES

Batteries are the number one warranty issue that we have. We recommend new, plain alkaline batteries for our products.
A good alkaline battery will have an expiration date printed on it. Alkaline batteries are dated six to seven years beyond the current year. Therefore a battery with an expiration date three years beyond the current year has already been sitting on a shelf for three to four years. Consider what happens to your car battery if you let it sit unused for three to four years.
If you have a voltmeter and your older batteries test to 1.48 or better, they should power our products. New plain alkaline batteries often test to 1.6 or better.
Use good quality alkaline batteries with an expiration date of at least six years into the future or newer. If you are using questionable batteries, be sure they measure at least 1.48 on a voltmeter. Generic or store brand batteries, and batteries labeled super, ultra, max, heavy duty, lithium and rechargeable should be avoided. These batteries provide their power at different rates than plain alkaline batteries. This may cause problems, especially with the display unit. It is not always a low battery that causes problems. It may be an overpowered battery.

– Proper Restart (Quick Set-up Guide)

In the event of installing or changing batteries in any of the units, all units need to be reset by following the setup procedures.

1. Remove batteries from the Thermo-hygro (outdoor) sensor, Rain sensor and the Base station. With the batteries out of the Base station, press any button 20 times. Let everything sit without batteries for 10 minutes. Verify that the Base station is completely blank before proceeding.
2. Then disconnect and reconnect the Wind sensor cable (be sure it clicks into place). Reinsert the batteries into the Thermo-hygro sensor and the Rain sensor. Be sure to use a new, quality alkaline battery (heavy duty and rechargeable types should be avoided)
3. Reinstall batteries in the Base station and do not press any other buttons for AT LEAST 10 minutes while the station completes its startup sequence. Pressing buttons before that time may prevent a good connection to the sensors.
4. All of your sensors should be reading on your display.

Batteries: Use good quality alkaline batteries with an expiration date of at least six years into the future or newer. If you are using questionable batteries, be sure they measure at least 1.48 on a voltmeter. Generic or store brand batteries, and batteries labeled super, ultra, max, heavy duty, lithium and rechargeable should be avoided. These batteries provide their power at a different rate than plain alkaline batteries. This may cause problems, especially with the display unit. It is not always a low battery that causes problems. It may be an overpowered battery.

Mounting Sensors

It is best to set everything up in the house to be sure it works before mounting the sensors. Tip the Rain gauge and spin the Wind sensor, to be sure they read to the base.

We do not have a complete sensor installation guide as each Home Installation is different and covering all of the variables would result in a guide far longer than anyone would be willing to read. Our website http://www.lacrossetechnology.com/support/setup.php has some tips.

With that said, here are a few general guidelines to remember when installing your sensors:

Place the Wind sensor as high as you can install it. In most cases 4-6 ft above the peak of your roof (or more) is required for accurate readings. (Avoid tall trees or other obstructions that may block or reflect the wind).
Be sure to observe the Directions listed on the sensor. The point of the vane will tell you where the wind is coming from.
Please carefully thread the Wind cord through the mast and be sure the cord fits in the *slot or hole designed to prevent pinching*. Please note the proper Direction when mounting.
Be sure not to overtighten U bolts to mast, as they can crack the mast.

Avoid: Transmitting antennas. PVC pipe (unless electrical grade) as a mast, improper extension cords (phone cord is much more resistant than our sensor cord) and modifications of the cords in any way.
Please note most recording stations have sensors mounted 33 ft up or higher.

5. Install the Rain gauge on a level platform that is stationary. If the gauge isn't level it will read low, and it it isn't stationary wind will cause it to read rain that isn't falling.
   Tip: Be sure not to screw the rain sensor down too tightly as that will result in a low or inaccurate reading.
6. Place the Rain gauge 2-3ft (or more) above the ground. This will prevent dirt from clogging the gauge and will place it higher than most insects are willing to climb. Placing the gauge extremely high is generally not a good idea as you may need to periodically clear debris such as leaves, spider nests etc.
7. Place the Thermo-hygro sensor in a well-shaded area that is protected from direct rainfall and sun, as it will read high if exposed to the sun. If the sensor gets too wet it will never read accurate humidity again, so take care to ensure that it will not be exposed to a downpour. Light incidental exposure to water typically will not harm the sensor.

8- A good location is under the eaves on the north side of the house. You can also build a small roof or box for it if you do not have an overhang. Please be sure it is well vented.

9- Your Wind cord, must be plugged into the Thermo-hygro sensor *before* installing batteries. Be sure the cord is secured from blowing around (do not staple or pinch), and occasionally check for animals chewing through.

–Program Set Up Menu

There are five function keys: SET, +, HISTORY, ALARM, and MIN/MAX. You begin by pressing the SET button until the display flashes. When you press and release the SET button after each step, you will be moved to the next step. You may exit the programming mode at any time by pressing the ALARM button.
If you take more than 5 seconds to change a setting, the unit will return to normal display mode. If you are not finished with changing your settings, you do not need to repeat the steps you have already completed. You can skip steps by pressing and releasing the SET button until you get to the next step.

1. CONTRAST SETTING:

Press and hold the SET button for five seconds. LCD and a number from 1-8 will be flashing. To increase the contrast of the LCD display, press and release the PLUS button. To decrease the contrast of the LCD, press and release the MIN/MAX button. Press and release the SET button once to move to the next menu item.

2. SETTING THE HOUR MANUALLY:

The Hour will be flashing. Use the PLUS button to increase the hour. Use the MIN/MAX button to decrease the hour. If using 12-hour Time Mode, be sure to set the hour for AM or PM. Press and release the SET button once to move to the next menu item.

3. SETTING THE MINUTES MANUALLY:

The Minutes will be flashing. Use the PLUS button to set the minutes. Press and release the SET Button once to move to the next menu item.

4. 12/24-HOUR TIME MODE:

Either 12h or 24h will be flashing on the display. Use PLUS or MIN/MAX button to change from 12 to 24 hour format time (12h for AM/PM, 24h for world time). Note: When in the 12h mode, there is only a "PM" display, which appears under the word TIME. During the "AM" hours, this area will be blank. Press and release the SET button once to move to the next menu item.

5. SETTING THE YEAR MANUALLY:

The Year will be flashing. Use the PLUS or MIN/MAX button to set the year. Press and release the SET button once to move to the next menu item.

6. SETTING THE MONTH MANUALLY:
The Month will be flashing. Use the PLUS or MIN/MAX button to set the month. Press and release the SET button once to move to the next menu item.

7. SETTING THE DATE MANUALLY:
The numeric day will be flashing. Use the PLUS or MIN/MAX button to set the date correctly. (The unit will determine the Day of the week automatically.) Press and release the SET button once to move to the next menu item.

8. SETTING FAHRENHEIT OR CELSIUS:
A degree symbol will be flashing, followed by F or C. Use the PLUS or MIN/MAX button to select F or C. Press and release the SET button once to move to the next menu item.

9. WIND SPEED UNIT OF MEASUREMENT:
MPh should now be flashing. To change, press and release the PLUS or MIN/MAX button to select MPH, KM/h, or M/S. Press and release the SET button once to move to the next menu item.

10. RAINFALL READING:
Inch should now be flashing. To change, press and release the PLUS or MIN/MAX button to select MM if desired. Press and release the SET button once to move to the next menu item.

11. RELATIVE AIR PRESSURE UNIT:
InHG (inches of mercury) should now be flashing. This can be set in inHG or hPa (hectopascal). To change, press and release the PLUS or MIN/MAX button to make your selection. Press and release the SET button once to move to the next menu item.

12. RELATIVE PRESSURE:
The Barometric Pressure (lower part of screen) will flash. Press and release the PLUS or MIN/MAX button to select the desired relative air pressure value. Note: This will be based off your local weather report or can be found on the Internet. Press and release the SET button once to move to the next menu item. Press and release the SET button once to move to the next menu item.

13. FORECAST TENDENCY SENSITIVITY:
Two air-pressure tendency arrows will appear (lower right portion of screen) and a flashing number will appear in the "pressure" area. Press and release the PLUS or MIN/MAX buttons to select the desired forecast sensitivity setting of 0.06, 0.09, or 0.12 inHG.
The lowest (most sensitive) number is used near the high humidity areas, the highest (least sensitive) number is for the low humidity, arid areas, and middle number is for everywhere else. Press and release the SET button once to move to the next menu item.

14. STORM WARNING THRESHOLD VALUE:
Use the PLUS or MIN/MAX buttons to select a value from the range of 0.09 to 0.27. This value is used to trigger a Storm Warning Alarm based on a drop in air pressure. Press and release the SET button once to move to the next menu item.

15. STORM WARNING ALARM:
Use the PLUS or MIN/MAX buttons to select AOF (Alarm Off) or AON (Alarm On). When the pressure falls by the Storm Warning Threshold Value you have selected, an alarm (if on) will be triggered.

16. FINAL STEP:
Press and release the SET button once to return to normal display. Congratulations. You are done!

TROUBLE-SHOOTING GUIDE
If you continue to experience problems with your Weather Station after a Proper Restart and Initial Set-up, please see if your problem is described in this Trouble-Shooting Guide and follow the suggestions to attempt to correct the problem before contacting technical support.
Please familiarize yourself with the function buttons. These are located on the bottom of the Base station and the Alarm button is on the top. They are: SET, PLUS, HISTORY, MIN/MAX and SNOOZE. These buttons will be used in the trouble-shooting guide.

– Indoor Temperature Readings
Display
Plus Button: Indoor Temperature is an optional display in the upper right-hand corner. In normal display mode, press the PLUS button to toggle between Indoor Temperature, Seconds counting, Alarm Time, or the Date in two different formats.

Indoor Temperature Displays as --. - (dashes) or is missing
Batteries: Be sure you have good alkaline batteries for the base station. This is almost always a power issue.

Indoor Temperature Displays as OFL
Batteries: Be sure you have good alkaline batteries for the base station. This is almost always a power issue.

Indoor Temperature is Blank
If only the Indoor Readings portion of the indoor unit is totally blank (not showing dashes or OFL), this may a problem with the indoor unit or the batteries. Remove all batteries from all units and follow the directions in the Proper Restart section above, using fresh alkaline batteries. If the problem continues, contact Customer Support for further instructions.

– Outdoor Temperature/Humidity Readings
Outdoor Temperature/Humidity Displays as --.- (dashes)
Distance: It may also be that the distance between the transmitter and the receiver is too great or has too many obstacles between the units to allow the signal to reach the transmitter.
The maximum transmission range is 330 feet in a straight line (line of sight). Trees, walls, windows, and obstructions will reduce transmission range by as much as half. (An obstruction would include anything that is in the line of sight like a roof, walls, floors, ceilings, trees, etc.). Certain building materials such as glass, stucco, and metal framework or siding, can greatly reduce the range.
In order to get an accurate reading and to prolong the life of your sensor, we recommend that you place the sensor in a sheltered area out of the sun and direct rain. Fog and mist will not affect the sensor, but a soaking in water may.

Sensor is wet: If your sensor becomes soaked, bring the unit inside, remove the batteries and allow the unit to dry overnight; then restart the station using the Proper Restart instructions. You can mount the sensor outside under an eave of your house or any other suitable place that will keep it out of the sun and rain. Do not wrap the sensor in plastic or seal it in a plastic bag. You may also put it in a two-sided bird feeder with a roof.

Restart: Remove batteries from all units and follow the directions in the Proper Restart section above.

Outdoor Temperature/Humidity is Inaccurate
Batteries: Be sure you have good alkaline batteries for both the sensor and the base station.

Placement: The sensor will measure the temperature in the location where it is placed. A good location is under the eaves on the north side of the house. You can also build a small roof or box for it if you do not have an overhang. Please be sure it is well vented.

Worn out: Also, your transmitter may be defective or worn out due to age or weather conditions. If you continue to have problems, please call for technical support.

Outdoor Temperature/Humidity Displays as OFL
Batteries: Be sure you have good alkaline batteries for both the sensor and the base station.
If the display shows OFL, your batteries may be weak or dead. Follow the “Proper Restart” instructions. If you continue to have problems, please call for technical support.

Outdoor Readings are Totally Blank
If only the Outdoor Readings portions of the indoor unit are totally blank (not showing dashes or OFL), this may a problem with the indoor unit or the batteries. Remove all batteries from all units and follow the directions in the Proper Restart section above, using fresh batteries. If the problem continues, contact Customer Support for further instructions.

-Rain Readings
Viewing Rain: From normal mode, press and release the SET button one time to get to" mode 2". Then use the PLUS button to toggle between, Relative Pressure, 24 hour Rain, and Total Rain. Please note: After 20 seconds, this will revert to the normal display.

Rain Reads 0.00:
The Rain will always read 0.00, even if no rain gauge is being used. If you are using the Rain gauge and have had rain, but are still reading 0.00, please check the following:

Debris: Is the rocker free of debris, insect nests, leaves, etc. If it has never worked, is there tape on the rocker?
Batteries: Are you using good alkaline batteries dated 6-7 years in advance?

Mounting: Is the rain gauge mounted level? If mounted with screws through the base, please be sure they are only snug and not too tight.

Distance: It may also be that the distance between the transmitter and the receiver is too great or has too many obstacles between the units to allow the signal to reach the transmitter.

Rain is inaccurate
Interference: Are there sources of radio frequency or electromagnetic interference near the Base or the Rain sensor? Ham radios, Baby monitors, Cordless Phones, etc can cause loss of signal or erratic readings.

Mounting: Is the rain gauge mounted level? If mounted with screws through the base, please be sure they are only snug and not too tight.
Accuracy Test:
To test any La Crosse Technology rain gauge, follow these steps:
1. Erase the Total rainfall or make note of this amount.
2. Pour water into the gauge very slowly until it clicks exactly ten times
3. Allow a minimum of ten minutes for this "rainfall" to accumulate, and check the amount listed on the Total rainfall counter
4. Your total should be .19 inches.

Please follow the Proper Restart listed above.

Wind Sensor
Wind speed inaccurate: Is the wind speed reading 0.00 or dashes or something else? Do the cups spin freely? Are the cups clear of insect nests leaves etc? Do all the other sensors work properly?

Mounting: Where is your wind sensor mounted and how high is it above the ground? In most cases, the sensor needs to be 3-4ft above the highest point on your roof in order to clear nearby obstructions and read accurately. The wind cups need to be installed below the mounting bracket. If possible please also email a few pictures of your sensor installation and the surrounding area to this address support@lacrossetechnology.com.

Cord: Check that the wind cord is in good repair, free of cuts, animal bites, pinch marks etc. Be sure it is secured from blowing around, by twist ties or zip ties. Do not use staples. Did you shorten, lengthen, splice or modify the cord in any way?
Check that the port on the Thermo-hygro sensor where the wind cord plugs in free of corrosion or bent wires.

Interference: Are there sources of radio frequency or electromagnetic interference near the Base or the Wind sensor? Ham radios, Baby monitors, Cordless Phones, etc can cause loss of signal or erratic readings.

Direction is stuck but speed is correct:
Check that nothing is binding the wind vane. Is it sticking in one particular direction? Check sources of interference above.

Direction is incorrect speed is fine:
Be sure to observe the Directions listed on the sensor (N, S, E, W) The point of the vane will tell you where the wind is coming from.

The large arrow on the compass rose of the base station will tell you the average of where the direction was coming from in the past 4.5 second update. The smaller arrows if they appear, indicate the directional changes during that same period.

Direction is fine but there is no Wind speed:
Check that the cups are there and spinning freely.

Please follow the Proper Restart listed above.

– Minimum and Maximum Records
The Weather Center will record the *Minimum and Maximum* value of Outdoor Temperature, Dew Point, Wind Chill, and Relative Air Pressure with Time and Date of recording automatically. The Weather Center will also record *Maximum* Wind Speed, Wind Gust, and 24 hour Rain with Time and Date of recording automatically.

MIN/MAX weather data can be viewed by pressing the MIN/MAX key in normal display mode. Keep pressing to toggle through the different Min and Max readings.
Reset the Min/Max data
To reset the MIN/MAX weather data, you shall need to reset each of the data independently.
1. Press MIN/MAX key to show the desired weather data.
2. Press and hold the SET key for about 2 seconds, then the "RESET" icon will appear at the bottom part of the LCD.
3. Press the PLUS key once, and then the stored value will be reset to the Current value and Current time.
4. Press the ALARM key to return to normal display mode.

Reset Total Rainfall
In normal display mode, press the MIN/MAX key 14 times to show the total rainfall value. The "RESET" icon will also be shown at the same time.

To Reset the Rainfall reading, press the PLUS key once when the Rainfall value and "Reset" icon is shown. Then the total rainfall amount will be reset to 0, and the time updated to Current time.

Alarms
Setting The Time Alarm
Press and hold ALARM button for about 5 seconds until the alarm time shows in the date area.
Press and hold the SET button until the Alarm Hour flashes. Use the PLUS or the MIN/MAX button to set the alarm hour. Press the SET button and the Alarm Minutes will start flashing. Use the PLUS or the MIN/MAX button to set the alarm minutes. Press ALARM when done to save the setting. You will see an Alarm Icon ((●)) showing in front of the alarm time. This indicates the time alarm is ON.

Turning off the Time Alarm:
An alarm icon ((●)) will appear in the upper right area of the Base means that Time Alarm is turned on. The time at which an alarm is set to ring will also be displayed. Press and hold ALARM button for about 5 seconds until the alarm time shows in the date area. Press and release the SET button so the icon ((●)) disappears.

Storm Alarm
In the Set Up Menu-Press and release the SET button 13 times until you see the up and down arrow and a number in the pressure area flashing. Use the PLUS or MIN/MAX buttons to select a value from the range of 0.09 to 0.27. This value is used to trigger a Storm Warning Alarm based on a drop in air pressure. Press and release the SET button once to move to turn the Storm Alarm on or off.

Turning Storm Alarm ON or OFF: Use the PLUS or MIN/MAX buttons to select AOF (Alarm Off) or AON (Alarm On). When the pressure falls by the Storm Warning Threshold Value you have selected, an alarm (if on) will be triggered.

Alarms for Outdoor Temperature, Humidity, & Wind Speed:
To set the weather data Alarms you shall need to set each alarm independently.
Press and hold ALARM button for about 5 seconds until the alarm time shows in the date area. Press and release the ALARM button to move to Outdoor Temperature high alarm, Outdoor Temperature low alarm, Outdoor Humidity high alarm, Outdoor Humidity low alarm, and Wind Speed high alarm.
To set the alarm in each of these areas, Press and hold the SET button until the alarm flashes. Use the PLUS or the MIN/MAX button to set the alarm value. Press ALARM when done to save the setting. You will see an Alarm Icon ((●)) showing in front of the alarm time. This indicates the alarm is ON.

Turn Alarms ON or OFF: An alarm icon ((●)) will appear next to the alarm value set. This indicates the alarm is turned ON. To turn the alarm off Press and hold ALARM button for about 5 seconds until the alarm time shows in the date area. Press and release the ALARM button to move to Outdoor Temperature high alarm, Outdoor Temperature low alarm, Outdoor Humidity high alarm, Outdoor Humidity low alarm, and Wind Speed high alarm. In each area press and release the SET button so the icon ((●)) disappears.

Master Buzzer
The Master Buzzer may be used to silence the alarms. The Buzzer will not sound but we can still see the alarm icon ((●)) flashing on the base for the Alarm. When any weather alarm is activated, the particular weather digits will flash to show user that the Alarm is triggered, yet the buzzer will not sound.

To switch off the Buzzer:
1. In normal display mode, press and hold the SET key until the icon "BUZZER OFF" is shown at the right side above the Wind direction scale. The base will change to setting mode.
2. Press ALARM key once to return to the normal display mode. The "BUZZER OFF" icon will still be shown.

To re-enable the Buzzer:
1. When the BUZZER OFF icon is shown on base, press the SET key shortly and the BUZZER OFF icon will disappear.
2. Press ALARM key once to return to the normal display mode. The "BUZZER OFF" icon will no longer be shown. Then the alarm will sound normally.

- History
The Weather Center can store up to 140 sets of weather data (not min/max values) which are recorded automatically at 3-hour intervals after the weather center is powered up, at the nearest time of 0:00, 03:00, 06:00, 09:00, 12:00, 15:00, 18:00 and 21:00.

Each History record includes the Wind Direction, *Wind Speed in Beaufort Scale*, Wind Chill Temperature, Wind Speed, Wind Gust, Outdoor Temperature and Humidity, Relative Pressure, 24 hour Rainfall, Total Rainfall, Pressure History and Weather Tendency. The Time and Date of history recording will be displayed.

Note:
In order to acquire the correct time of recording of the history records, the Time and Date should be manually set as soon as installing batteries to the Weather Center.

To view the Weather History:
1. Press the HISTORY key. The latest weather record will be shown with the date and time of recording. The "HISTORY" icon will be displayed at the bottom of the LCD. HISTORY icon
2. Press MIN/ MAX to view older records. Press MIN/MAX and PLUS key to view "Previous" and "Next" record respectively. The records are made at 3-hour intervals)

Press the SET key to see items normally viewed in “mode 2”.

- Forecast Icons
Forecast Icon Shows Incorrect Conditions
This feature indicates what the weather may be like 12 hours into the future and not what is happening right now. The weather forecasting feature is estimated to be 75% accurate. The weather forecast is based solely upon the change of air pressure over time; creating a necessity to disregard all weather forecasting for about 24 hours after the unit has been set-up, reset, or moved from one altitude to another (i.e. from one floor of a building to another floor). In areas where the weather is not affected by the change of air pressure, this feature will be less accurate. To adjust forecast settings see section 2.

What Do the Sun/Clouds/Rain Icons Indicate?
Three possible weather icons will be displayed:
Sunny-indicates that the weather is expected to improve (not that the weather will be sunny).
Sun with Clouds-indicates that the weather is expected to be fair (not that the weather will be sunny with clouds).
Clouds with Rain-indicates that the weather is expected to get worse (not that the weather will be rainy).

Forecast Icon is Blinking
Occasionally the word “tendency,” the up (or down) arrow, and the clouds or sun will become animated. This is a visual indication that there has been a recent/sudden change in the weather conditions. Generally, this is the result of a fast low front coming in.

– Display Information
Entire Display is Blank
Batteries: If your weather station has a blank display, it is generally a power issue. Please be sure you are using good alkaline batteries dated at least six years in advance. Remove the batteries from the unit, press the SET button 20 times to clear any electricity, and install good alkaline batteries.
Segmented Numbers
If your weather station has missing segments on numbers or letters, it is generally a power issue. Please be sure you are using good alkaline batteries dated at least six years in advance. Remove the batteries from the unit, press the SET button 20 times to clear any electricity, wait 10 minutes with batteries out. Then install good alkaline batteries.

Display Has Black “ink blob” on it.
If your screen has black on it that may look like and ink blob, this is likely do to the display unit falling or being impacted in some way. Unfortunately, this is not a warranty issue.

– Power Source
Battery Leakage
Battery leakage is not a warranty issue. We recommend you contact the battery manufacturer if this occurs.

Prevention: Be aware of expiration dates. Do not mix old and new batteries. Install according to proper polarity.
Store batteries at room temperature or allow coming back to room temperature before using.
Remove weak batteries from you device to prevent leakage.