# Professional WiFi Weather Station

# User Manual

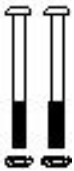
⚠ **Warning:** Any metal object may attract a lightning strike, including your weather station mounting pole. Never install the weather station in a storm.

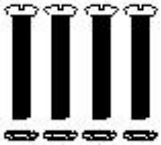
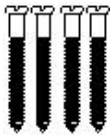
⚠ **Warning:** Installing your weather station in a high location may result in injury or death. Perform as much of the initial check out and operation on the ground and inside a building or home. Only install the weather station on a clear, dry day.

## 1. Parts List

The weather station consists of the following parts.

| QTY | Item | Image |
|---|---|---|
| 1 | **Display Console**<br>**Frame Size** :7.5x 3.5x1.5inch (190x39x89mm）<br>**LCD Size:** 4.33 x 2.32 inch (110 x 59 mm) |  |
| 1 | Integrated Wind Sensor Size: 8.1x7.7x6.1inch (205x195x155mm) |  |

| QTY | Item | Image |
|---|---|---|
| 1 | **Remote Thermo-hygro Sensor**<br>**Dimensions**:2.95x2.1x0.87inch (75x53x22mm) |  |
| 1 | **Foot Mounting (with pole insert)**<br>**Dimensions:** 4x3x1.5inch (101x76x37mm) |  |
| 1 | **Mounting Bracket Back Plate (pole mount)**<br>**Dimensions:**<br>3x2.96x0.79inch (76x75x20mm) |  |
| 1 | **Mounting Pole Dimensions:**<br>11.8x1.18x0.79inch (300x30x20mm) |  |
| 2 | Pole mounting nuts (M3) / bolts Ø3) |  |

| QTY | Item | Image |
|---|---|---|
| 4 | Pole mounting nuts (M5) / bolts ( Ø5) |  |
| 4 | Tapping screws |  |
| 1 | Manual |  |
| 1 | Power Adapter |  |

## 1.1 Recommend Tools

- Precision screwdriver (for small Phillips screws)
- Compass or GPS (for wind direction calibration)
- Adjustable Wrench
- Hammer and nail for hanging remote Thermo-hygrometer sensor

## 2. Getting Started

***Note:*** *Powering up with batteries for the integrated wind sensors and remote thermo-hygrometer sensor first, and the display console with power adapter second.*
***( Batteries for display console are a backup option, only the power adapter keeps the backlight on permanently )***

***Note: Do not press any button*** *until all the remote sensors report in the display screen, otherwise the display console will terminate to connect with remote sensors.*

***Note:*** *Do not install the batteries backward. You can permanently damage the sensors. Do not use rechargeable batteries ( Solar panel doesn't charge the battery and it is an auxiliary power supply ).*

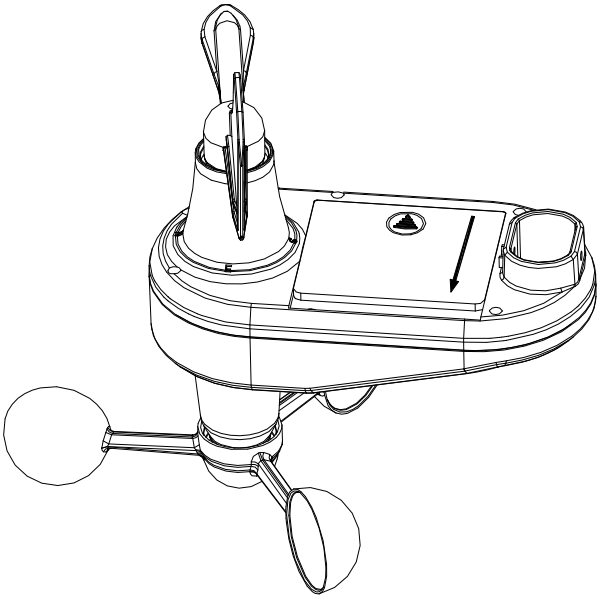
***Note:*** *We recommend installing Lithium batteries in colder weather.*

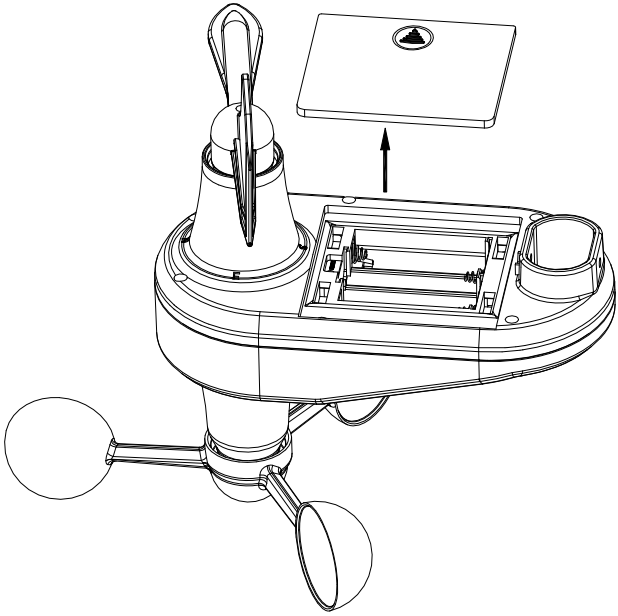
### 2.1 Sensors Battery Installation

#### 2.1.1 Wind Sensor Battery Installation.

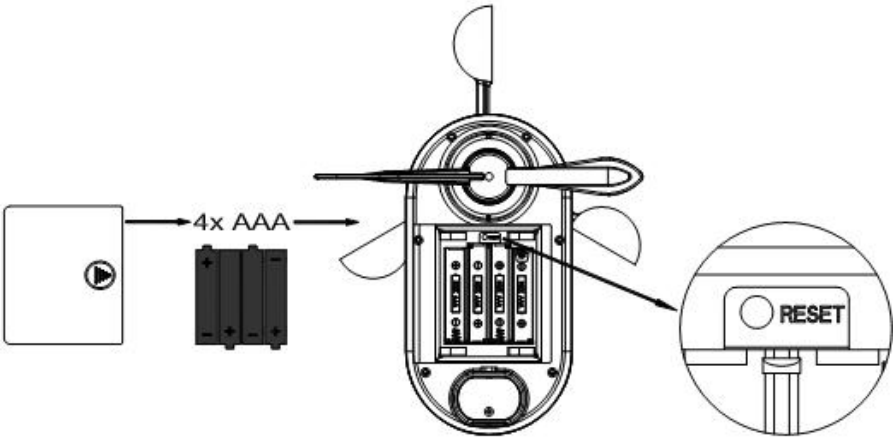
1. Locate the battery door on the back of the wind sensor, ***push outwards along the arrow direction*** and open the battery compartment upwards.

**Note:** *If the battery door is closed tightly, push harder to open the battery door (Make sure there is no water on your hands).*





3. Inserting 4xAAA batteries in the battery compartment, and close the battery door.



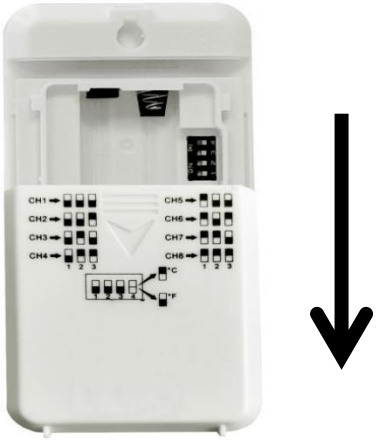

4. The wind sensor LED indicator will light for 4 seconds, and then flash once per 16 seconds thereafter. Each time it flashes, the sensor is transmitting data.

**Note:** *If the wind sensor does not power up after inserting the batteries, press the reset button inside of the battery door as show on above image.*

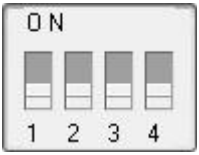
## 2.1.2 Thermo-hygro Sensor Battery Installation

Locate the battery door on the back of the Thermo-hygrometer sensor, ***push downwards along the arrow direction*** and open the battery compartment.

**Note:** *If the battery door is closed tightly, push harder to open the battery door (Make sure there is no water on your hands).*




1. **BEFORE** inserting the batteries, locate the dip switches on the inside of transmitter.
The **image** displays all four switches in the OFF position (factory default setting).




2. **Channel Number:** The weather station supports up to eight transmitters. To set each channel number (the default is Channel 1), change Dip Switches 1, 2 and 3, as referenced in Table 1.

3. **Temperature Units of Measure:** To change the transmitter display units of measure (°F vs. °C), change Dip Switch 4 as referenced in Table 1.

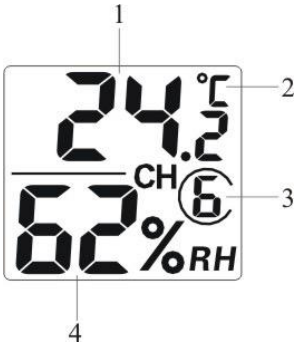
| DIP SWITCH | | | | FUNCTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| DOWN | DOWN | DOWN | --- | Channel 1 |
| DOWN | DOWN | UP | --- | Channel 2 |
| DOWN | UP | DOWN | --- | Channel 3 |
| DOWN | UP | UP | --- | Channel 4 |
| UP | DOWN | DOWN | --- | Channel 5 |
| UP | DOWN | UP | --- | Channel 6 |
| UP | UP | DOWN | --- | Channel 7 |
| UP | UP | UP | --- | Channel 8 |
| --- | --- | --- | DOWN | ° F |
| --- | --- | --- | UP | ° C |

**Table 1**

4. Insert 2xAAA batteries. (with the negative terminal of the battery in contact with each spring). Lithium batteries are recommended for cold weather environments.

5. After inserting the new batteries, the remote sensor LED indicator will light for 4 seconds, and then flash once per 60 seconds thereafter. Each time it flashes, the remote sensor is transmitting data.
6. Verify the correct channel number (CH) and temperature units of measure (°F vs. °C) are on the display, as shown in Figure 9.

(1) temperature
(2) temperature units (°F vs. °C)
(3) channel number
(4) relative humidity




## 3. Display Console and Sensors Setup

### 3.1 Console Power ON with Adapter

1. Power on with adapter to keep the backlight on. The battery is a back-up option, saving console settings when powered off from adaptor.

***Note:*** *Power the console with adapter first, not the batteries, otherwise the backlight will not light on constantly and the WiFi icon will not flash for online connection.*

2. Remove the battery door on the back of the display, Install 4x AAA batteries and close the door, place on the desk or mount on the wall.


## 3.2 Sensors Connection with Console

1. Once the display console is powered up, it will automatically scan all the nearby Integrated wind sensors and the Thermo-hygrometer Sensors until all received, and switch to the normal mode from which all further settings can be performed.

2. ***Do not press any button*** until all the remote sensors report in the display screen, otherwise the display console will terminate to connect with remote sensors.

***Note:*** *The console support 8 different channel remote thermo-hygrometer sensors. If you have more than one remote sensors and make sure that they are all powered up and transmitting on different channels, the display will automatically toggle between sensors until all sensors have reported in.*

***Note:*** *Make sure that the distance between weather station sensors and display console should be within 10ft (3m) to 100ft (30m). If the weather station sensors is too close or too far away, it may not receive a proper signal.*

## 3.3 Console WiFi Setup Guide

For weather station models with WiFi function, you can start to set up wifi connection and weather data uploading. For details of this part, please refer to the separate "**WiFi Setup Guide**" Manual. *( The time and time zone will automatically sync with local internet time and time zone when console WiFi connected successfully, no need to set manually )*

## 3.4 Console SET Operation

### 3.4.1 Quick Set Display Mode

**1. Time/Week/Date Toggle Display**

In Normal Mode, Press (do not hold) the ***SET*** key, and the time area will flash. Press *CHANNEL/+* or *MAX/MIN/-* key to toggle between time, week(seconds), and date(year). Press SET key again to exit.

**2. CH1 Temp/Dew Point/Feels like Toggle Display**

Press (do not hold) SET key again, the CH1 temp area will flash. Press *CHANNEL/+* or *MAX/MIN/-* key to toggle between **Temp, Dew Point, and Feels like**. Press SET key again to exit.

***Note**: If the sensor temp channel display CH(1-8), then it will display the specific CH(1-8) in quick display mode adjustment.*

## 3.4.2 Set (Program) Mode

**Note:** In the SET mode, press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to change or scroll the setting value. Hold the ***CHANNEL/+*** key or ***MAX/MIN/-*** key for three seconds to increase/decrease rapidly.

**Note:** To exit the Set mode at any time, press the ***SNOOZE*** button of the display console.

In Normal Mode, **Long Press** the ***SET*** key for three seconds to enter the SET Mode. The parameters value will begin flashing as follows.

| | Press ***SET*** Key to skip entering into the following features and flash. | Press the ***CHANNEL/+*** or ***MAX/MIN/-*** key to set up the following features. |
|---|---|---|
| 1 | 12/24 Hour Format | 12 hour or 24 Hour Format |
| 2 | Hour | Hour value up or down |

| | | |
|---|---|---|
| 3 | Minute | Minute value up or down |
| 4 | Date Format | MM-DD-YY or DD-MM-YY |
| 5 | Month | Calendar month up or down |
| 6 | Day | Calendar day up or down |
| 7 | Year | Calendar year up or down |
| 8 | Max/Min Clearing | ON (Clears 24h) or OFF (Manually) |
| 9 | Temperature Units | °F or °C |
| 10 | Wind Speed Units | m/s, km/h, mph, knots, bft or ft/s |
| 11 | Time SYNC | Internet SYNC time ON or OFF ***( Synchronize the internet time when console WiFi connected successfully )*** |
| 12 | Wind Direction Location ***(Default NOR in Northern Hemisphere, Default SOU in Southern Hemisphere)*** | Northern Hemisphere (NOR) or Southern Hemisphere (SOU). (Refer to Part 3.7.1 for details) |

## 3.5 Sensors Operation Verification

The following steps verify proper operation of the sensors prior to installing the sensor array.

1. **Verify Wind Speed.** Rotate the wind cups manually or with a constant speed fan. Verify the wind speed is not reading 0.0.

2. **Verify In/Outdoor Temperature.** Verify the indoor and outdoor temperature match closely with the console and sensors in the same location (about 5 to 10' (1.5 to 3 meters) apart). The sensors should be within 4°F /2℃ (the accuracy is ± 2°F/1℃). Allow about 30 minutes for both sensors to stabilize.

**3. Verify In/Outdoor Humidity.** Verify the indoor and outdoor humidity match closely with the console and sensors in the same location (about 5 to 10' (1.5 to 3 meters) apart). The sensors should be within 10% (the accuracy is ± 5%). Allow about 30 minutes for both sensors to stabilize.

# 3.6 Sensors Installing Precaution

## 3.6.1 Test the Sensors Before Installation

***Recommend to operate and test the weather station for one week before installing it in the permanent location.*** In this period, you can check out all of the functions, ensure proper operation, and familiarize with the professional weather station and calibration procedures. This will also allow you to test the wireless range of the weather station.

## 3.6.2 Site Survey Before Installation

Do a site survey before installing the weather station. Take the following points into Consider:

1. **Avoid radiant heat transfer from buildings and structures.** In general, install the sensor array at least 5ft (1.5m) from any building, structure, ground, or roof top.

2. **Avoid wind obstructions.** The rule of thumb is to install the sensor array at least four times the distance of the height of the tallest obstruction. For example, if the building is 20ft (6m) tall, install 4 x (20 – 6)' = 56ft (17m) away. Use common sense. If the weather station is installed next to a tall building, the wind will not be accurate.

3. **Wireless Range.** The radio communication between display console and transmitter in an open field can reach a distance of up to 330ft (100m), assume there are no interfering obstacles such as buildings, trees, vehicles, high voltage lines. Wireless radio signals will not penetrate metal buildings. Most wireless applications will only reach up to100ft (30m) due to building obstructions, walls and interference.

4. **Radio interference** such as PCs, radios or TV sets can, in the worst case, entirely cut off radio communication. Please take this into consideration when choosing display console or mounting locations.

### 3.6.3 Best Practices for Wireless Communication

Wireless communication is susceptible to other interference, such as distance, walls and metal barriers. We recommend the following best and useful practices for trouble-free wireless communication.

1. **Electro-Magnetic Interference (EMI)**. Keep the console several feet away from computer monitors and TVs.

2. **Radio Frequency Interference (RFI).** If you have other 433 MHz devices and communication is intermittent, try turning off these other devices for troubleshooting purposes. You may need to relocate the wireless transmitters or receivers to avoid intermittent communication.

3. **Line of Sight Rating.** This device is rated at 300ft line of sight (no interference, barriers or walls) but typically you will get 100ft maximum under most real-world installations, which include passing through barriers or walls.

4. **Metal Barriers.** Radio frequency will not pass through metal barriers such as aluminum siding. If you have metal siding, align the remote and console through a window to get a clear line of sight.

The following is a table of reception loss vs. the transmission medium. Each “wall”or obstruction decreases the transmission range by the factor shown below.

| Medium | RF Signal Strength Reduction |
|---|---|
| Glass (untreated) | 5-15% |
| Plastics | 10-15% |
| Wood | 10-40% |
| Brick | 10-40% |
| Concrete | 40-80% |
| Metal | 90-100% |

# 3.7 Final Installation Place of Sensors

## 3.7.1 Integrated Wind Sensors Installation

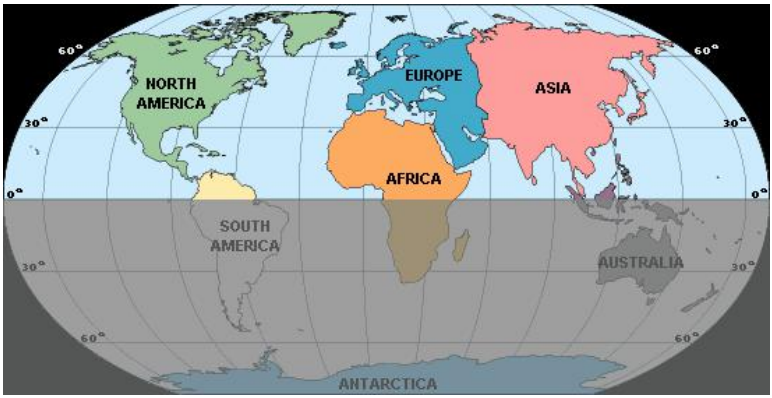
This Weather Station can be used in both the Northern and Southern Hemispheres. Prior to installation, you will need to calibrate the wind direction.

***Note:*** *There are four alphabet letter of N, E, S and W around the wind direction.(N is North, E is East, S is South, W is West)*

***Note:*** *The location division (NOR or SOU) on the Display Console and the directions of the sensor have to be adjusted to match with your real location.*

***Note:*** *If the wind direction sensor is not positioned correctly during installation, permanent wind direction error will be introduced.*

**Northern Hemispheres**

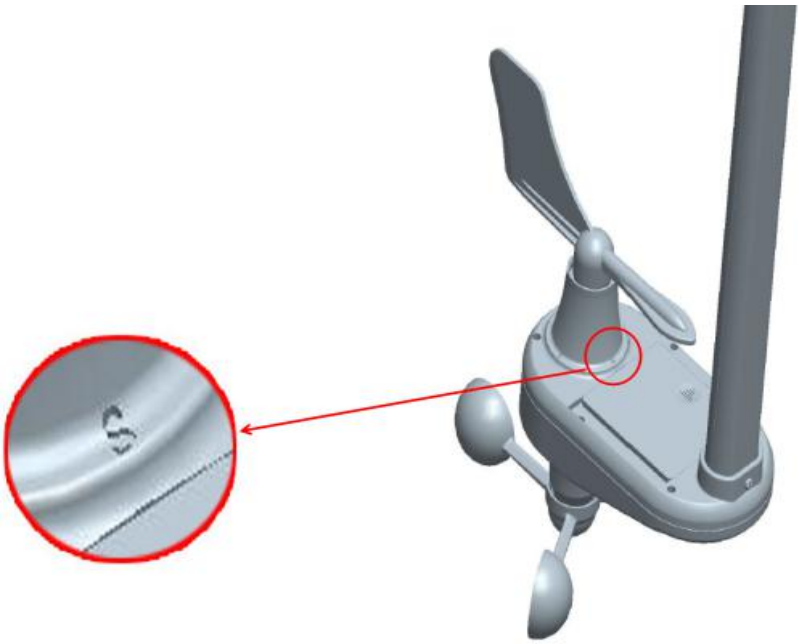



**Southern Hemispheres**

## 1. Northern Hemispheres (NOR) References.

The cardinal directions (N, S, E, W) molded on the body of the outdoor sensor are indicators for the Northern Hemisphere only.

**Step 1:** There is a “S” indicator on the wind vane that indicates South, as shown in below image. Check the wind directions with compass and Align this “S” marker in the direction of South.




**Step 2:** Console operation set to Northern Hemispheres( **NOR** in the time area) in Location division. (Check the detailed step of setting the time area in the part 12 of Chapter 3.4.2)

## 2. Southern Hemispheres (SOU) References.

For Southern Hemisphere installations, ignore the direction (N, S, E, W).

**Step 1:** Install the Integrated wind transmitter, and face “S” marker in the direction of North.

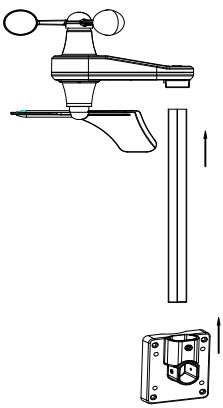
**Step 2:** Console operation set to Southern Hemispheres( **SOU** in the time area) in Location division. (Check the detailed step of setting the time area in the part 12 of Chapter 3.4.2)

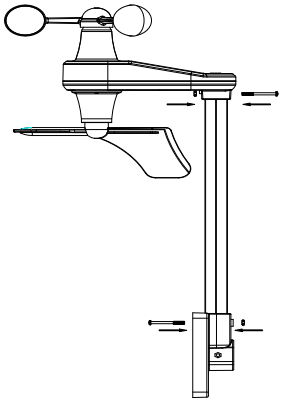
## 3. Mounting & Fixing the Sensors

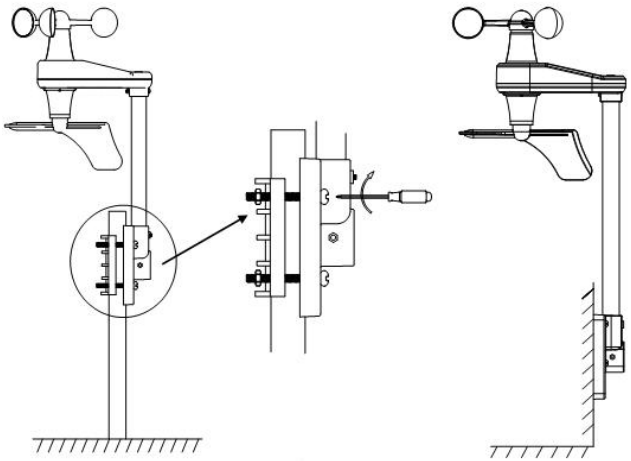
### 1. Mounting & Fixing the Sensor Vertically

Fasten the integrated outdoor sensor to the mounting pole brackets with foot-mounting,two Ø3 bolts and M3 nuts.

Then, tighten the mounting pole to your existing mounting pole with the four bolts ( Ø5) and nuts (M5) , or fix it on the flat surface with four tapping screws, as show in below image.



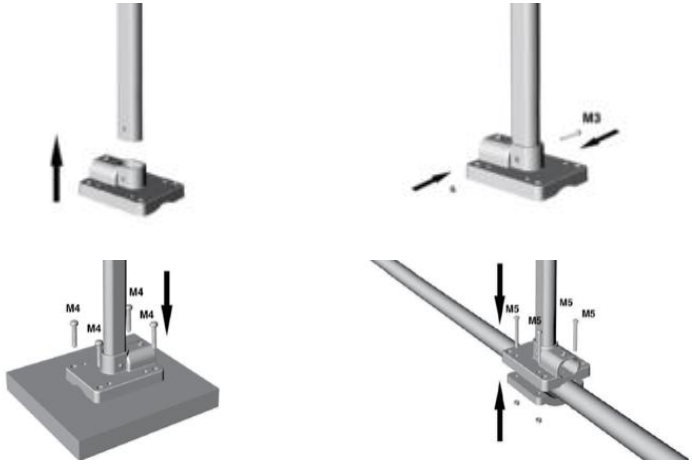




**2. Mounting & Fixing the Sensor Horizontally**

Fasten the integrated outdoor sensor to the mounting pole brackets with foot-mounting，two Ø3 bolts and M3 nuts.

Then, tighten the mounting pole to your existing mounting pole with the four bolts ( Ø5) and nuts (M5) , or fix it on the flat surface with four tapping screws, as show in below image.



### 3.7.2 Thermo-hygro Sensor Installation

It is recommended you mount the Thermo-hygrometer sensor outside in a shaded area.

The remote sensor is not waterproof, it is best to mount in a well protected area, such as under an eve. Use a screw or nail (not included) to affix the remote sensor to the wall, the sensor can also lay flat or on the table,as shown in below image.

**Note:** The north facing wall is preferred because it is in the shade most of the day. The Direct sunlight and radiant heat sources will result an inaccurate temperature readings.

# 4. Other Console Features Operation

## 4.1 Max/Min Mode

### 4.1.1 Max Record Viewing and Reset

In normal mode, press (do not hold) the ***MAX/MIN/-*** key**,** the **MAX** icon will be displayed in date area.

Press the ***SET*** key to view Max values of wind (Gust and Average), sensor temp and humidity (dew point and feels like), indoor temp and humidity.

Press the ***CHANNEL/+*** button to switch the display between remote thermo-hygrometer sensors 1 through 8 to view Max values.

Press the ***MAX/MIN/-*** key for three seconds to clear all Max values.

### 4.1.2 Min Record Viewing and Reset

Press the ***MAX/MIN/-*** key again (do not hold), the **MIN** icon will be displayed.

Press the ***SET*** key to view Min values of sensor temperature and humidity(dew point and feels like), indoor temperature and humidity.

Press the ***CHANNEL/+*** button to switch the display between remote thermo-hygrometer sensors 1 through 8 to view Min values.

Press the ***MAX/MIN/-*** key for three seconds to clear all Min values.

Press the ***SNOOZE*** key to exit the min/max checking and reset mode, return to normal display mode.

 ***Note:*** *The Maximum/Minimum values will display the current values after reset.*

 ***Note:*** *If you own more than one thermo-hygrometer sensor, the minimum and maximum value of all sensors will be cleared in the reset mode.*

## 4.2 Alarm Mode

The weather station includes the following alarms:

- Time (Alarm 1 and Alarm 2)
- Wind Gust
- Wind Average
- Sensor Temperature
- Sensor Humidity
- Sensor Feels Like Temperature
- Sensor Dew Point
- Indoor Temperature
- Indoor Humidity

### 4.2.1 View High/Low Alarm Value

To view the current alarm settings, press the ***ALARM*** key to enter the alarm mode. **HI AL 1** will be displayed in the date

area. At the same time Alarm 1 time and other HI alarm parameters are displayed.

Press ***SET*** key to view Alarm 2 time.

Press ***ALARM*** key again to view the LOW alarms along with the alarm clock time in the same way as HI alarms.

Press ***ALARM*** key again to return to normal mode.

**Note:** Press the ***SNOOZE/LIGHT*** key at any time to return to the normal mode in HI/Low alarm mode.

### 4.2.2 Setting High/Low Alarm

Press ***ALARM*** key to enter the alarm mode.

Press and hold the ***SET*** key for three seconds. The first alarm parameter will begin flashing (alarm hour).

To save the alarm setting and proceed to the next alarm parameter, Press (do not hold) the ***SET*** key.

To adjust the alarm parameter, press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to increase or decrease the alarm settings, or press and hold the ***CHANNEL/+*** key or ***MAX/MIN/-*** key for three seconds to increase or decrease the alarm settings rapidly.

Press the ***ALARM*** key to turn on (the alarm icon will appear ) and off the alarm.

Press the ***SNOOZE/LIGHT*** key once at any time to return to the normal mode.

The following is a list of the individual alarm parameters that are set (in order):

1.Alarm hour(alarm 1)
2.Alarm minute(alarm 1)
3.Alarm hour(alarm 2)
4.Alarm minute(alarm 2)
5.Wind Gust HI alarm
6.Wind average HI alarm
7.Sensor temp HI alarm
8.Sensor temp low alarm
9.Sensor humidity HI alarm alarm
10.Sensor humidity low alarm
11.Sensor feels like HI alarm
12.Sensor feels like low
13.Sensor dew point HI alarm
14.Sensor dew point low alarm
15.Indoor temperature HI alarm
16.Indoor temperature low alarm
17.Indoor humidity HI alarm
18.Indoor humidity low alarm

***Note:*** *To prevent repetitive temperature alarming, there is a 0.9 °F(0.5°C) tolerance band. For example, if you set the high alarm to 80.0°F(26.7°C) and silence the alarm, the alarm icon will continue to flash until the temperature falls below 80.0°F (26.7°C), at which point, the alarm will reset and must increase above 80.0°F(26.7°C) to activate again.*

***Note:*** *To prevent repetitive alarming of humidity, there is a 4% tolerance band in humidity alarm. For example, if you set the high alarm to 60% and silence the alarm, the alarm icon will continue to flash until the humidity falls below 56%, at which*

*point, the alarm will reset and must increase above 60% to activate again.*

### 4.2.3 Alarm Triggered

When an alarm condition is exceed, the alarm icon will flash 

(visual) and the alarm beeper will sound (audible). To silence the beeper, press any key.

### 4.2.4 Button Beeper ON/OFF

In normal mode, press and hold the ***ALARM*** key for three seconds to toggle the **BZ ON** (beeper on) or **BZ OFF** (beeper off) depending on the current setting.

Display console return to normal mode without any operation in three seconds.

## 4.3 Sensor Search Mode

If a sensor loses communication, dashes (--.-) will be displayed. If the specific ***CH**** is lost, press the ***CHANNEL/+*** button to display that channel prior to entering the search mode.

To reacquire the lost signal, ***press and hold*** the ***CHANNEL/+*** button for 3 seconds to enter the sensor search mode.

The icon **CH*** will appear in the time area. Press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to toggle between the following sensors:

- **CH***. Synchronizes Channel 1-8 Sensors (dependent on which channel is displayed before entering the Sensor Search Mode).
- **WIN**. Synchronizes Wind Sensors.
- **ALL**. Synchronizes All Sensors.
- **NOT**. Do nothing and exit the Sensor Search Mode.

After selecting one of the above options, press the ***SET*** key to re-sync, and the display will return to normal mode. **Do not press any buttons** until the synchronization is complete. The remote search icon will display constantly for 3 minutes until the signal is reacquired.

## 4.4 Low Battery Mode

A low battery indicator icon is shown in the display window for thermo-hygrometer sensor.

When the low battery icon appears (The thermo-hygrometer sensor battery voltage is lower than 3.6V), replace the batteries with fresh batteries.

***Note:*** *Be sure to never mix old and new batteries, and never mix battery types such as alkaline and lithium together.*

## 4.5 Snooze Mode

If the time alarm sounds, and you wish to silence the alarm, press the ***SNOOZE/LIGHT*** key. The time alarm icon will continue to flash and the time alarm will silence for five minute.

Press any key to permanently exit the ***Snooze*** mode.

## 4.6 Backlight Mode

1) There are 3 levels of brightness of the display backlight. When backlight is on with an adapter, press ***SNOOZE/LIGHT*** key to switch to the brightest level(3).

2) In the brightest level(3), press the ***SNOOZE/LIGHT*** key and the backlight will turn off, the console will show non-colorful display.

3) When the backlight is in off status, press the ***SNOOZE/LIGHT*** key and the backlight will show colorful display.

***Note:*** *If the display console is plugged into an adapter, the backlight will remain on. It is not recommended to leave the display backlight ON for a long period of time when operating on batteries only, or the batteries will run out quickly.*

## 4.7 Sensors Calibration Mode

***Note:*** *The calibrated value can only be adjusted on the display console.The outdoor remote sensor(s) always displays the un-calibrated or measured value.*

***Note:*** *The measured humidity range is between 10% and 99%. Humidity cannot be accurately measured outside of this*

*range. Thus, the humidity cannot be calibrated below 10% or above 99%.*

*The purpose of calibration is to fine tune or correct for any sensor error associated with the devices margin of error. The measurement can be adjusted from the console to calibrate to a known source.*

*Calibration is only useful if you have a known calibrated source you can compare it against, and is optional. This section discusses practices, procedures and sources for sensor calibration to reduce manufacturing and degradation errors. Do not compare your readings obtained from sources such as the internet, radio, television or newspapers. They are in a different location and typically update once per hour.*

*The purpose of the weather station is to measure conditions of your surroundings, which vary significantly from location to location.*

### 4.7.1 Temperature Calibration Mode

In normal mode, **press and hold** the ***SET*** and ***CHANNEL/+*** keys at the same time for five seconds to enter the temp calibration mode. The indoor temperature will begin flashing.

Press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to increase or decrease the temperature reading (in increments of 0.1). Press and hold the ***CHANNEL/+*** key or ***MAX/MIN/-*** key for three seconds to increase or decrease rapidly.

Press the ***ALARM*** key to reset current value.

Press the ***SET*** key switch to sensor Temperature(CH1 to 8).

To exit the temperature calibration mode at any time, press the ***SNOOZE/LIGHT*** button or ***SET*** key.

### 4.7.2 Humidity Calibration Mode

In normal mode, **press and hold** the ***SET*** and ***MAX/MIN/-*** keys at the same time for five seconds to enter into the humidity calibration mode. The indoor humidity will begin flashing.

Press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to increase or decrease the humidity reading (in increments of 1%). Press and hold the ***CHANNEL/+*** key or ***MAX/MIN/-*** key for three seconds to increase or decrease rapidly.

Press the ***ALARM*** key to reset current value.

Press the ***SET*** key switch to sensor humidity(CH1 to 8).

To exit the humidity calibration mode at any time, press the **SNOOZE/LIGHT** button or ***SET*** key.

***Note:*** *The Humidity is a difficult parameter to measure accurately and drifts over time. The calibration feature allows you to zero out this error. To calibrate humidity, you will need an accurate source, such as a sling psychrometer or Humidipaks One Step Calibration kit.*

### 4.7.3 Wind Speed Calibration Mode

In normal mode, **press and hold** the ***SET*** and ***ALARM*** keys at the same time for five seconds to enter the wind mode. The letter “CAL” will appear at the screen. The wind speed value will flash (the default is 1.00).

Press the ***CHANNEL/+*** key or ***MAX/MIN/-*** key to adjust the wind speed calibration factor from 0.75 to 1.25, where:

Calibrated Wind Speed = Calibration factor x Measured Wind Speed

Press and hold the ***CHANNEL/+*** or ***MAX/MIN/-*** key for three seconds to increase or decrease rapidly.

Press the ***ALARM*** key to reset current value.

To exit the wind speed calibration mode at any time, press the **SNOOZE/LIGHT** button or ***SET*** key.

***Note:*** *The wind gust is also affected by the wind speed calibration factor.*

***Discussion****: Wind speed and wind gust are adversely affected by installation constraints. The rule of thumb is to install the weather station four times the distance of the height of the tallest obstruction (for example, a 6m(20ft) house would require an installation 24m(80ft) away).*

*In many instances, due to trees and other obstructions, this is not possible. The wind speed calibration allows you to correct for these obstructions.*

*In addition to installation challenges, wind speed bearings (any moving part) wears over time. To correct for wear, the correction value can be increased until the wind cups must be replaced.*

*Without a calibrated source, wind speed is a difficult parameter to measure. We recommend using a calibrated wind meter and constant, high speed fan.*

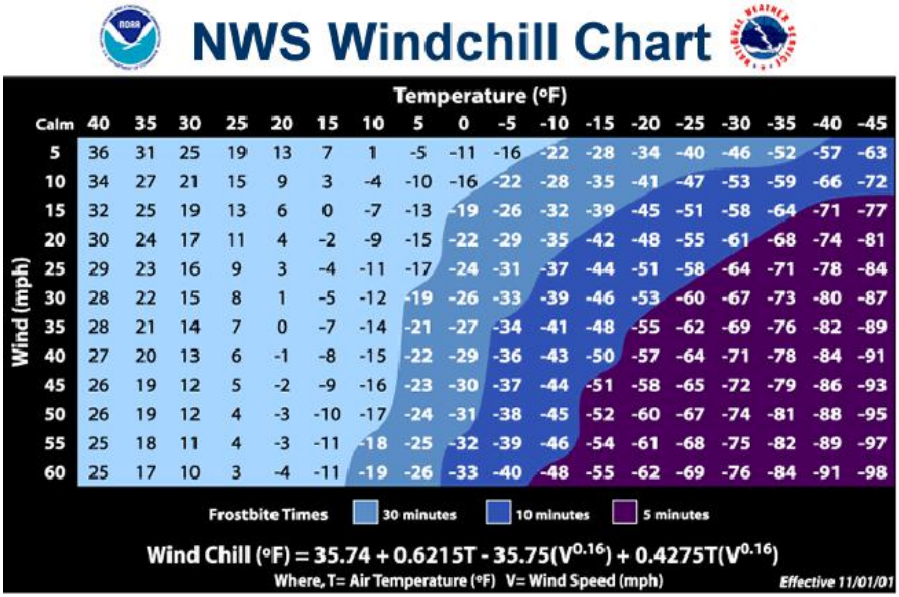
## 4.8 Factory Default Reset

To reset the display console to factory default, press the ***MAX/MIN/- key*** while plugging in power adaptor at the same time ( *Take out batteries before starting the reset operation* ).

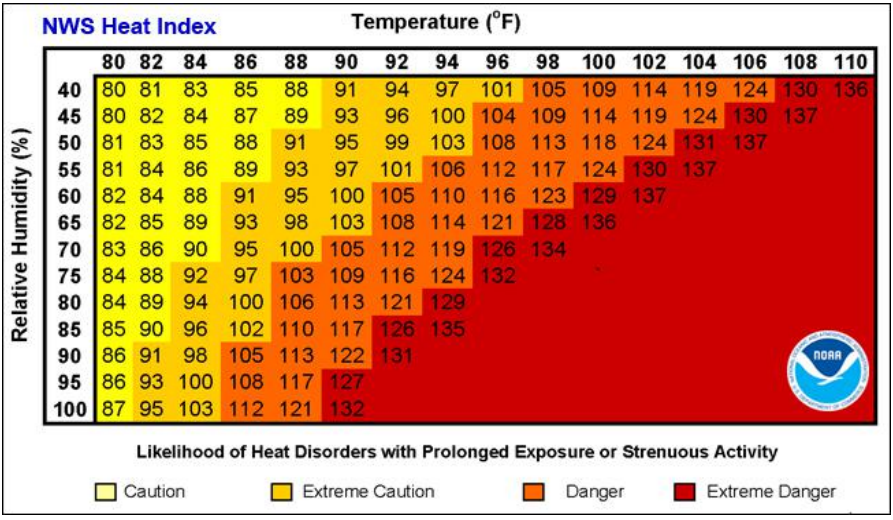
## 5. Feels Like Temp Knowledge

Feels like temperature is a combination of Heat Index and Wind Chill.

1. Temperatures less than 4.4°C(40°F), the wind chill is displayed, as shown in the National Weather Service Wind Chill Table below:




2. Temperatures greater than 26.7℃(80°F), the heat index is displayed, as shown in the National Weather Service Heat Index Table below.



3. When the temperature is between 4.4C (40° F) and 26.7C (80 ° F), the OUT temperature is displayed (Feels Like temperature is the same as OUT temperature).

## 6. Trouble Shooting Guide

| Problem | Solution |
|---|---|
| Wireless remote not reporting in to console.<br><br>There are dashes (--.-) on the display console. | If any of the sensor communication is lost, dashes (--.-) will be displayed on the screen. To reacquire the signal, press and hold the CHANNEL/+ button for 3 seconds, the remote search icon will be constantly displayed. Once the signal is reacquired, the remote search icon will turn off, and the current values will be displayed.<br><br>The maximum line of sight communication range is 100m(330ft) and 30m(100ft) under most conditions. Move the sensor assembly closer to the display console.<br><br>If the sensor assembly is too close (less than 1.5m/5ft), move the sensor assembly away from the display console.<br><br>Make sure the remote sensor LCD display is working and the transmitter light is flashing once per 60 seconds. |

| | |
|---|---|
| | Install a fresh set of batteries in the remote sensor. For cold weather environments, install lithium batteries.<br><br>Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill).<br><br>Move the display console around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers.<br><br>Move the remote sensor to a higher location. Move the remote sensor to a closer location. |
| Indoor and Outdoor Temperature do not agree | Allow up to one hour for the sensors to stabilize due to signal filtering. The indoor and outdoor temperature sensors should agree within 2°C/4°F) (the sensor accuracy is ± 1°C/2°F).<br><br>Use the calibration feature to match the indoor and outdoor temperature to a known source. |
| Indoor and Outdoor Humidity do not agree | Allow up to one hour for the sensors to stabilize due to signal filtering. The indoor and outdoor humidity sensors |

| | |
|---|---|
| | should agree within 10 % (the sensor accuracy is ± 5 %).<br><br>Use the calibration feature to match the indoor and outdoor humidity to a known source. |

# 7. Specifications

## 7.1 Weather Parameters Specification

The following table provides specifications for the measured parameters.

| **Measurement** | **Range** | **Accuracy** | **Resolution** |
|---|---|---|---|
| Indoor Temperature | 0 to 60°C (32 to 140°F) | ± 1°C (± 2°F) | 0.1°C(°F) |
| Sensor Temperature | -40 to 60°C (-40 to 140°F) | ± 1°C (± 2°F) | 0.1°C(°F) |
| Indoor Humidity | 10 to 99 % | ± 5% (only guaranteed between 20 to 90%) | 1% |
| Sensor Humidity | 10 to 99 % | ± 5% (only guaranteed between 20 to 90%) | 1% |

| | | | |
|---|---|---|---|
| Wind Direction | 0 - 360º | ± 10º | ±1º |
| Wind Speed | 0 to 50 m/s (0 to 112mph) | 2 m/s ~10 m/s:±0.3m/s, 10m/s ~50 m/s: ±10% (whichever is greater) | 0.1m/s |

## 7.3 Power Specification

| | |
|---|---|
| Display Console | 4xAAA 1.5V Alkaline or Lithium batteries (not included) |
| Integrated wind Sensor: | 4xAAA alkaline batteries or Lithium batteries (not included), the batteries provide backup power when there is limited solar energy.<br><br>**Note**: Solar panel doesn't charge the battery and it is an auxiliary power supply |
| Thermo-hygrometer Sensor : | 2 x AAA alkaline batteries or Lithium batteries (not included) |
| Adapter: | 5.9V~0.5A(included) |
| Battery life: | Minimum 12 months for sensors (use lithium batteries in cold weather climates less than -20°C(-4°F). |

## 7.3 Wireless Specifications

| | |
|---|---|
| Wireless Transmit Range (in open air): | 330ft (100m) |
| Frequency: | 433MHz |
| Thermo-hygrometer Sensor Data Update Period: | 60s |
| Integrated Wind Sensor Data Update Period: | 16s |