SC088 Professional Wireless Weather Station
User Manual

SC088 Professional Wireless Weather Station User Manual

1. Introduction

Thank you for your purchase of the Professional Wireless Weatherstation. The following user guide provides step by step instructions for installation, operation and troubleshooting.

2. Warnings

Warning: Any metal objects 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 an elevated location may result in injury or death. Safety goes first. Make sure your setup and preparation is secure and taking no risks.

3. Getting Started

The weather station consists of a display console (receiver), a sensor array with Integrated Outdoor Transmitter and mounting hardware

3.1 Parts List

The weather station consists of the following parts (as referenced in Figure 1).

QTY	Item	Image
1	Display Console Frame Dimensions: 7.3x5.9x0.98inch (18.5x15x2.5cm) LCD Dimensions: 5.9x4.5inch (15.0x11.5cm)	
1	Integrated Outdoor Transmitter Dimensions (LxHxW)：13 x 5.9 x 11inch (33*15*28cm)	
1	Foot Mounting (with pole insert) Dimensions: 3 x 4 x 1.5inch (7.6*10.2*3.8cm)	

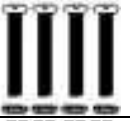
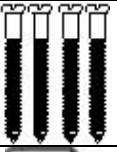
1	Mounting Bracket Back Plate (pole mount) Dimensions:3 x 3 x 0.8inch (7.5*7.5*2cm)	
1	Mounting Pole Dimensions: 12 x 1.2 x 0.8inch (30*3*2cm)	
2	Pole mounting nuts (M3) / bolts Ø3)	
4	Pole mounting nuts (M5) / bolts (Ø5)	
4	Tapping screws	
1	Manual	
1	Power Adapter	

Figure 1

3.2 Recommend Tools

- Precision screwdriver (for small Phillips screws)
- Compass or GPS (for wind direction calibration)
- Adjustable Wrench
- Hammer and nail for Foot Mounting.

3.3 Sensor Assembly Set Up

The following illustration shows the full segment for Thermo-Hygrometer , Wind and Rain Transmitter purposes only , as shown in Figure 2.

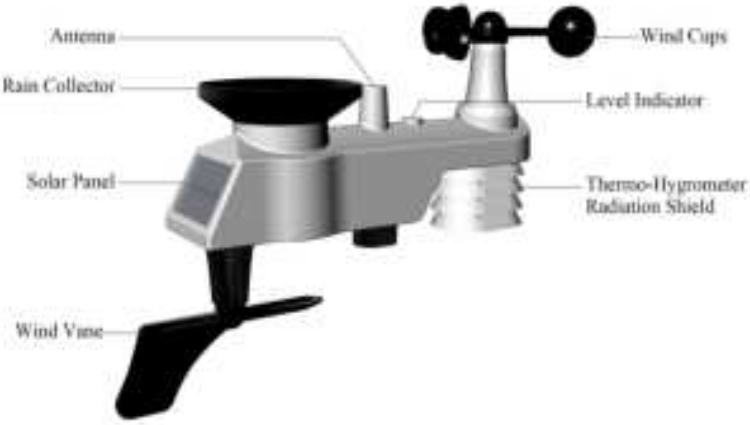


Figure 2

3.3.1 Insert batteries into the transmitter.
Locate the battery door on the transmitter, push and open the battery compartment, as shown in Figure 3.

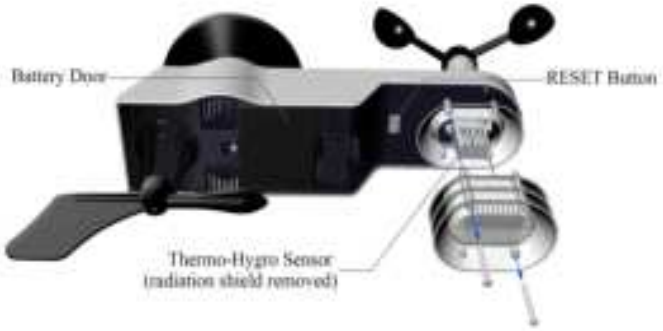


Figure 3

Remove the battery door on the back of the sensor by removing the set screw, as shown in Figure 4.

Figure 4

Inserting 3xAA batteries in the battery compartment, as shown in Figure 5.

Figure 5

Close the battery cover. Make sure the gasket (around the battery compartment) is properly seated in its place prior to closing the door, then tighten the set screw.

Note: Do not install the batteries backwards. You can permanently damage the sensors. The solar panel does not charge the batteries, so rechargeable batteries are not needed or recommended.

Note: We recommend installing Lithium AA batteries for sensors.
The sensor LED indicator will light for 3 seconds, and then flash once per 16 seconds thereafter. Each time it flashes, the sensor is transmitting data. Place the battery cover and push it to close the compartment.

Note: If the sensor does not power up after inserting the batteries, press the reset button as shown in Figure 6.

Figure 6

3.4 Display Console

3.4.1 Display Console Layout

Note: The following illustration shows the full segment LCD display as shown in Figure 7 for description purposes only and will not appear like this during normal operation.

Figure 7

1.Outdoor temperature mode
2.Outdoor Battery low voltage prompt
3.Outdoor humidity display
4.Outdoor humidity HI/LO alarm icon
5.Temperature units (°F or °C)
6.Outdoor temperature change indication
7.Weather tendency indicator
8.Indoor temperature display
9.Indoor humidity display
10.Wind speed Gust display
11.Wind direction
12.Wind speed average display
13.Moon phase
14.Week or Second display
15.Time
16. Date
17. Rainfall display (1h, 24h, week, month, total)
18. Pressure (REL and ABS) display

3.4.2 Display Console Set Up

It is recommended to plug in the power supply to reduce the battery consumption and extend the service life.

Note: The sensor array must be powered and updating before powering up the console, or the console will time out searching for the sensors.

Power the console last.

Make certain the weather station sensor array is at least 10’ away from the console and within 100’ of the console. If the weather station is too close or too far away, it may not receive a proper signal.

Remove the battery door on the back of the display, as shown in Figure 8. Insert three AAA (alkaline or lithium)) batteries in the back of the display console. The display will beep once and all of the LCD segments will light up for a few seconds to verify all segments are operating properly.

Note: The character contrast is best from a slightly elevated viewing angle.

Figure 8

Replace the battery door, and fold out the desk stand and place the console in the upright position.

3.4.3 Connect Sensors with Display Console

The unit will instantly display indoor temperature, humidity, pressure, tendency, moon phase, and time. The wind speed, wind gust, wind direction, rain, outdoor temperature and humidity will update on the display within a few minutes. Do not Press any menu buttons until the outside transmitter report in, otherwise the outdoor sensor search mode will be terminated. When the outdoor transmitter data has been received, the console will automatically switch to the normal mode from which all further settings can be performed.

While in the search mode, the remote search icon will be constantly displayed.

Note: The power adapter is intended to be correctly oriented in a vertical or floor mounted position. The prongs are not designed to hold the

plug in place if it is plugged into a ceiling, under-the-table or cabinet outlet.

Figure 9

Note: If the power adapter is plugged in, **BL ON** will display in the time area for three seconds when powered up. Conversely, if the power adapter is not plugged in, **BL OFF** will be displayed.

3.5 Sensor Operation Verification

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

1. Verify proper operation of the rain gauge. Tip the sensor array back and forth several times. You should hear a “clicking”sound within the rain gauge. Verify the rain reading on the display console is not reading 0.00. Each “click”represents 0.01in of rainfall.

2. Verify proper operating of the wind speed. Rotate the wind cups manually or with a constant speed fan. Verify the wind speed is not reading 0.0.

3. Verify proper operation of the indoor and outdoor temperature. Verify the indoor and outdoor temperature match closely with the console and sensor array in the same location
(about 9.8 ft apart). The sensors should be within 4°F (the accuracy is ±2°F). Allow about 30 minutes for both sensors to stabilize.

4. Verify proper operation of the indoor and outdoor humidity. Verify the indoor and outdoor humidity match closely with the console and sensor array in the same location (about 9.8 ft apart). The sensors should be within 10% (the accuracy is ± 5%). Allow about 30 minutes for both sensors to stabilize.

4. Weather Station Installation

4.1 Pre Installation Check.

Before installing your weather station in the permanent location, we recommend operating the weather station for one week in a temporary

location with easy access. This will allow you to check out all of the functions, insure proper operation, and familiarize you with the weather station and calibration procedures. This will also allow you to test the wireless range of the weather station.

4.2 Location Survey

Perform a site survey before installing the weather station. Consider the following:

1. You must clean the rain gauge once per year and change the batteries every year. Provide easy access to the weather station.

2. Avoid radiant heat transfer from buildings and structures. In general, install the sensor array at least 5' from any building, structure, ground, or roof top.

3. Avoid wind and rain 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 and the monting pole is 6ft (2m) 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 and rain will not be accurate.

4. Wireless Range. The radio communication between receiver and transmitter in an open field can reach a distance of up to 300ft, providing there are no interfering obstacles such as buildings, trees, vehicles, high voltage lines. Wireless signals will not penetrate metal buildings. Most applications will only reach 100ft due to building obstructions, walls and interference.

5. 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 console or mounting locations.

4.3 Best Practices for Wireless Communication

Wireless communication is susceptible to interference, distance, walls and metal barriers. We recommend the following best 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 transmitters or receivers to avoid intermittent communication.

3. **Line of Sight Rating.** This device is rated at 300 ft line of sight (no interference, barriers or walls) but typically you will get 100 ft 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%

5. Final Installation of Sensor

5.1 Integrated outdoor transmitter installation.

Professional Wireless 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, representing for the direction of North, East, South and West. Wind direction sensor has to be adjusted so that the directions on the sensor are matching with your real location. Permanent wind direction error will be introduced when the wind direction sensor is not positioned correctly during installation.

Northern Hemispheres

Southern Hemispheres

5.1.1 Northern Hemispheres (NOR).
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 Figure 10. Align this “S” marker in the direction of South.
Step 2: Console operation is set to Northern Hemispheres (**NOR** in the time area) in Location division.

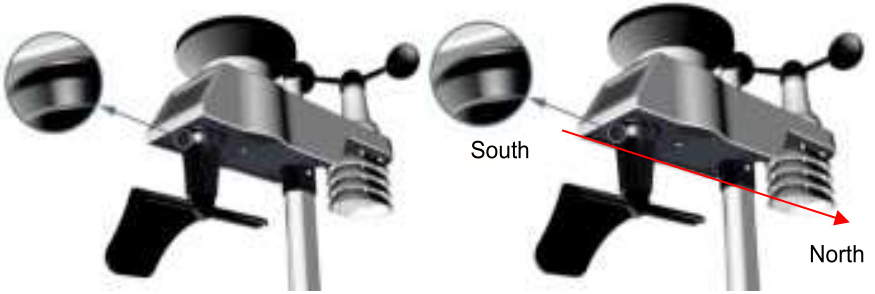


Figure 10

5.1.2 Southern Hemispheres (SOU) References.
For Southern Hemisphere installations, ignore the direction (N, S, E, W), and face **the solar panel to the North** (and in a sunny position) when it comes to install the Integrated outdoor sensor, as shown in Figure 11.
Step 1: Install the Integrated outdoor transmitter and face the solar panel to the 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 15 of Chapter 7.2)

Figure 11

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.
If the wind direction sensor is not positioned correctly during installation, permanent wind direction error will be triggered.

5.1.3 Mounting & Fixing the Sensor Horizontally

Fasten the integrated outdoor sensor to the mounting pole brackets with two foot-mounting screws 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 shown in Figure 12.

Figure 12

5.1.4 Mounting & Fixing the Sensor Vertically

Fasten the integrated outdoor sensor to the mounting pole brackets with two foot-mounting screws 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 shown in Figure 13.

Figure 13

6. Low Battery Icon

A low battery indicator icon is shown in the display window for Integrated outdoor transmitter. When the low battery icon appears (the battery voltage is lower than 3.6V), replace the batteries in the sensor with fresh batteries. Be sure to never mix old and new batteries, and never mix battery types such as alkaline and lithium together.

7. Console Operation

Note: The console has five keys for easy operation: **SET** key and **CHANNEL/+** key, **SNOOZE/LIGHT** key**, ALARM** key and **MIN/MAX/-**key on the right side.

7.1 Quick Display Mode

Note: To exit the Quick Display Mode at any time, press the **SNOOZE/LIGHT** button of the display console.

While in Normal Mode, press (do not hold) the **SET** key to enter the Quick Display Mode as follows:

- once for time/second/date, time/week/date and time/week/year
- twice for rainfall.
- three for pressure
- four for outdoor dew point temperature

1. Time, Time/Week and Date. Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between time/second/date, time/week/date and time/week/year.
2. Rainfall. Press the **CHANNEL/+** or **MIN/MAX/-** key to toggle between 1h, 24h, week, month and total.
To clear the total rain, press the **CHANNEL/+** or **MIN/MAX/-** button until total rain is displayed. The total rain will flash. Press and hold the **SET** button for three seconds until total rain reads 0.0.

Note: Rainfall periods are calculated as below:
1H=From start of the hour to the current time.(For example, at 08:25, 1H rainfall means rainfall amount from 08:00 to 08:25)
24H=From start of the day to the current time.(For example, at 08:25,24H rainfall means rain fall amount from 00:00 to 08:25)
Week=From start of the week to the current time(For example, at 08:25 of Thursday, Week rainfall means rainfall amount from 00:00 of this Sunday to08:25 this Thursday)
Month=From start of the month to the current time.(For example, at 08:25 of Oct.20, Month rainfall means rainfall amount from 00:00 of 1st Oct.to 08:25 20th Oct)Total=Total rainfall amount from the latest powering on.

3. Absolute Pressure and Relative Pressure. Press the **CHANNEL/+** or MIN/MAX/**-** key to toggle between absolute pressure and relative pressure.
4. Outdoor dew point. Press the **CHANNEL/+** or **MIN/MAX/-** key to toggle between temperature, dew point and feels like.

7.2 Set (Program) Mode

While in Normal Mode, press and hold the **SET** key for at least three seconds to enter the Set Mode. The first setting will begin flashing. You can press the **SET** key again to skip any step, as defined below.

Note: In the Set mode, press the [+] key or [-] key to change or scroll the value. Hold the [+] key or [-] key for three seconds to increase/decrease rapidly.

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

1. **12/24 Hour Format (default: 12h).** Press the **SET** key again to adjust the 12/24 hour format setting (FMT). Press the [+] key or **[-]** key to change between 12 hour and 24 hour format.
2. **Change Hour.** Press the **SET** key again to set the hour. Press the [+] key or **[-]** key to adjust the hour up or down. Note the PM icon is present during afternoon hours.
3. **Change Minute.** Press the **SET** key again to set the minute. Press the [+] key or **[-]** key to adjust the minute up or down.
4. **Date Format (default: M-D).** Press the **SET** key again to enter the day/month format mode. Press the [+] key to switch between M-D, D-M.
5. **Change Month.** Press the **SET** key again to set the calendar month. Press the [+] key or **[-]** key to adjust the calendar month.
6. **Change Day.** Press the **SET** key again to set the calendar day. Press the [+] key or **[-]** key to adjust the calendar day.
7. **Change Year.** Press the **SET** key again to set the calendar year. Press the [+] key or **[-]** key to adjust the calendar year.
8. **Max/Min Clearing (default: ON).** Press the **SET** key again to set the max/min clearing mode (CLR). The Max/Min can be programmed to clear daily (at midnight) or manually. Press the [+] key or **[-]** key to switch between “Clears 24h” and Clears Manually.
9. **Temperature Units of Measure (default: °F).** Press the **SET** key again to change the temperature units of measure. Press the [+] key or **[-]** key to switch between °F and °C units of measure.
10. **Wind Speed Units of Measure (default: MPH)**. Press the **SET** key again to change the wind speed units of measure . Press the [+] key or **[-]** key to toggle the wind speed units between m/s, km/h, mph, knots, and bft.
11. **Rainfall Units of Measure (default: IN)**. Press the **SET** key again to change the Rainfall units of measure. Press [+] key or **[-]** key to toggle

12. **Barometric Pressure Display Units(default: inHg)**. Press the **SET** key again to change the pressure units of measure. Press the [+] key or [**-**] key to toggle the pressure units between mmHg, inHg or hPa.
13. **Pressure Threshold Setting (default level 2)**. Press the **SET** key again adjust the pressure threshold setting. Press [+] key or [**-**] key to adjust the pressure threshold setting up or down.
14. **Weather Forecast Icon Setting (default: partly cloudy)**. Press the **SET** key again to set the weather forecast icon initial conditions (based on the current weather conditions). Press the [+] key or [**-**] key to toggle weather icons between sunny, partly cloudy, cloudy, or rainy.
15. **Location division (default: Northern Hemisphere).** Press the **SET** key again to change the location division. Press the [+] key or [-] key to toggle the sunlight units Northern Hemisphere (NOR)or Southern Hemisphere(SOU).(refer to 5.0 Final Installation of Integrated outdoor transmitter)

7.3 Sensor Search Mode

If outdoor sensor loses communication, dashes (--.-) will be displayed. To reacquire the lost signal, press and hold the **CHANNEL/+** button for 3 seconds to enter the sensor search mode.

7.4 Reset Min/Max record

Note: The minimum and maximum value of all data will be cleared in the reset mode.

In normal mode, press (do not hold) the **MIN/MAX/-** key**,** and the **MAX** icon will be displayed. Press the **SET** key to view rainfall (1h, 24h, week or month) , pressure (ABS or REL) max value ,outdoor temperature (temperature, dew point or feels like).

Next, press and hold the **MIN/MAX/-** key for three seconds(and the **CLR** character is flashing in time area) to clear the rainfall, wind speed, wind gust, pressure, temperature and humidity maximum values. The maximum values will now display the current values.

Press the **MIN/MAX/-** key again (do not hold), and the **MIN** icon will be displayed. Press the **SET** key to view pressure (ABS or REL) min value, pressure (ABS or REL) min value ,outdoor temperature (temperature, dew point or feels like).

Next, press and hold the **MIN/MAX/-** key for three seconds(and the **CLR** character is flashing in time area) to clear the pressure, temperature and

humidity minimum values. The minimum values will now display the current values.

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

7.5 Snooze Mode

If the alarm sounds, and you wish to silence the alarm, press the **SNOOZE/LIGHT** key, the backlight will turn on. The alarm icon will continue to flash and the alarm will silence for five minute. press any keys (**MIN/MAX/- , SET, ALARM, CHANNEL/+**) to permanently exit the snooze mode.

7.6 Back Light Mode

If the LED is off, press the **SNOOZE/LIGHT** key once, the backlight will turn on for five seconds, and if no operation is performed for three seconds, the backlight will turn off.

ADJUSTABLE BACKLIGHT BRIGHTNESS

There are 3 levels of brightness of backlight. Press **SNOOZE/LIGHT** key to switch between 3 levels.

Press and hold the **SNOOZE/LIGHT** key for two seconds, and the backlight will turn on permanently, and display **BL ON** icon will be displayed for three seconds in the time field.

To turn off the backlight at any time, press and hold the **SNOOZE/LIGHT** key for two seconds, and **BL OFF** icon will be displayed for three seconds in the date field.

Note: If plugged into AC power, the backlight will remain on. It is not recommended leaving the backlight on for a long period of time when operating on batteries only, or the batteries will run down quickly.

8. Alarm Mode

The includes the following alarms:

- Time(Alarm1 and Alarm2)
- Wind Gust
- Wind Average
- Outdoor Temperature
- Outdoor Humidity
- Outdoor Feels Like Temperature
- Outdoor Dew Point
- Hourly Rainfall
- 24 Hour Rainfall
- Absolute Pressure
- Relative Pressure
- Indoor Temperature
- Indoor Humidity

8.1 Alarm Operation

When an alarm condition is exceeded, the alarm icon (visual) will flash and the alarm beeper will sound (audible). Press any keys to silence the beeper.

8.2 Viewing the High and Low Alarms

To view the current alarm settings, press the **ALARM** key to enter the alarm mode. HI will be displayed in the time area. At the same time Alarm time parameters of out/indoor temperature/humidity, rain, feels like, wind gust, wind average, and dew point are displayed.

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

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

8.3 Setting the Alarms

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

Next, 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 [+] or [-] key to increase or decrease the alarm settings, or press and hold the [+] or [-] 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. After 30 seconds of inactivity, the alarm mode will time out and return to 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 high alarm
6. Wind Average high alarm
7. Outdoor temperature high alarm
8. Outdoor temperature low alarm
9. Outdoor humidity high alarm
10. Outdoor humidity low alarm
11. Outdoor feels like high alarm
12. Outdoor feels like low alarm
13. Outdoor dew point high alarm
14. Outdoor dew point low alarm

15. Rainfall (1h) high alarm
16. Rainfall (24h) high alarm
17. Absolute pressure high alarm(ABS)
18. Absolute pressure low alarm(ABS)
19. Absolute pressure high alarm(REL)
20. Absolute pressure low alarm(REL)
21. Indoor temperature high alarm
22. Indoor temperature low alarm
23. Indoor humidity high alarm
24. 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 79.1°F (26.2°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. 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.

8.4 Alarm and Command Key Beeper ON/OFF Mode

The beeper can be silenced for both alarms and key strokes.

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

The **BZ ON** (beeper on) or **BZ OFF** (beeper off) icon will appear in the time area for three seconds. Press and hold the **ALARM** key again for three seconds to toggle the **BZ ON** or **BZ OFF** command.

9. Adjustment or Calibration

Note: The calibrated value can only be adjusted on the console. The 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 your weather station is to measure conditions of your surroundings, which vary significantly from location to location.

9.1 Temperature Calibration

In normal mode, press and hold the **SET** and **CHANNEL/+** keys at the same time for five seconds to enter the temperature calibration mode. The indoor temperature will begin flashing. Press the [+] or [-] key to increase or decrease the temperature reading (in increments of 0.1). Press and hold the [+] or [-] key for three seconds to increase or decrease rapidly.
Press the **ALARM** key to reset current value.
Press the **SET** key to switch to outdoor temperature. Press the [+] or [-] key to increase or decrease the temperature reading (in increments of 0.1). Press and hold the [+] or [-] key for three seconds to increase or decrease rapidly.

Press the **SNOOZE/LIGHT** key to exit the calibration mode at any time. If no operation is performed, the calibration mode will timeout in 30 seconds.

9.2 Setting Calibrated Humidity

In normal mode, press and hold the **SET** and **MIN/MAX/-** keys at the same time for five seconds to enter the humidity calibration mode. The indoor humidity will begin flashing. Press the [+] or [-] key to increase or decrease the humidity reading (in increments of 1%), and press and hold the [+] or [-] key for three seconds to increase or decrease rapidly.

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

Press the **SET** key to switch to outdoor humidity. Press the [+] or [-] key to increase or decrease the temperature reading (in increments of 0.1). Press and hold the [+] or [-] key for three seconds to increase or decrease rapidly.

Press the **SNOOZE/LIGHT** key to exit the calibration mode at any time. If no operation is performed, the calibration mode will timeout in 30 seconds.

Note: 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.

9.3 Setting Calibrated Pressure, wind speed and Rainfall

In normal mode, press and hold the **SET** and **ALARM** keys at the same time for five seconds to enter the pressure , wind speed and rainfall calibration mode, then wind speed icon will begin flashing. Press the [+] or [-] key to increase or decrease the wind speed reading, and press and hold the [+] or [-] key for three seconds to increase or decrease rapidly.

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

Press the **SET** key to switch to absolute pressure and relative pressure, and press the **SNOOZE/LIGHT** key to exit the calibration mode at any time. If no operation is performed, the calibration mode will timeout in 30 seconds.

1. **Absolute Pressure and Relative Pressure Calibration.** Press the **SET** key again to enter the pressure calibration mode. Press the [+] or [-] key to increase or decrease the pressure reading (in increments of 0.01inHg)

Note: The display console displays two different pressures: absolute (measured) and relative (corrected to sea-level).
To compare pressure conditions from one location to another, meteorologists correct pressure to sea-level conditions. Because the air pressure decreases as you rise in altitude, the sea-level corrected pressure (the pressure your location would be at if located at sea-level) is generally higher than your measured pressure.

Thus, your absolute pressure may read 28.62 inHg (969 mb) at an altitude of 1000 feet (305 m), but the relative pressure is 30.00 inHg (1016 mb).

The standard sea-level pressure is 29.92 in Hg (1013.2hpa). This is the average sea-level pressure around the world. Relative pressure measurements greater than 29.92 inHg (1013.2hpa) are considered high pressure and relative pressure measurements less than 29.92 inHg are considered low pressure.

To determine the relative pressure for your location, locate an official reporting station near you (the internet is the best source for real time barometer conditions), and set your weather station to match the official reporting station.

2.Wind Speed (Gust) Calibration. Press the **SET** key again entering the Wind Calibration Mode, the Wind Speed Calibration value will begin flashing (the default is 1.00). Press the [+] or [-] button to adjust the wind speed calibration factor from 0.75 to 1.25, where:

Calibrated Wind Speed = Calibration factor x Measured Wind Speed

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 6 m house would require an installation 24 m 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.

3. Rainfall Calibration (1 Hour, 24 Hour, Daily, Monthly, Total). Press the **SET** key again and the Rain Calibration value will begin flashing (the default is 1.00). Press the [+] or [-] button to adjust the rain calibration factor from 0.75 to 1.25, where:

Calibrated Rain = Calibration factor x Measured Rain

Discussion: The rain collector is calibrated at the factory based on the funnel diameter. The bucket tips every 0.01” of rain (referred to as resolution). The accumulated rainfall can be compared to a sight glass rain gauge with an aperture of at least 4”.

Note: that debris and insects can collect inside the tipping mechanism (they make a good spiders nest). Carefully remove the funnel and inspect the tipping mechanism for debris prior
to calibration.

Press the **SET** key again entering the normal mode.

10. Other Console Features

The following section describes additional features and display icons.

10.1 Weather Forecasting

Note: The weather forecast or pressure tendency is based on the rate of change of barometric pressure. In general, when the pressure increases, the weather improves (sunny to partly cloudy) and when the pressure decreases, the weather degrades (cloudy to rain).

The weather forecast is an estimation or generalization of weather changes in the next 24 to 48 hours, and varies from location to location. The

tendency is simply a tool for projecting weather conditions and is never to be relied upon as an accurate method to predict the weather.

10.2 Weather Icons

Condition	Icon	Description
Sunny		Pressure is rising and the previous condition is partly cloudy.
Partly Cloudy		Pressure is falling and the previous condition is sunny or Pressure is rising and the previous condition is cloudy.
Cloudy		Pressure is falling and the previous condition is partly cloudy or Pressure is rising and the previous condition is rainy.
Rainy		Pressure is falling and the previous condition is cloudy.

10.3 Moon Phase

The following moon phases are displayed based on the calendar date.

Figure 14

10.4 Pressure Threshold Setting

The pressure threshold (the negative or positive rate of change of pressure signifying a change in the weather) can be adjusted from 2 mbar/hour to 4 mbar/hour (default level 2 mbar/hour).

The lower the level pressure threshold setting, the higher sensitivity for weather forecast changes. Locations that experience frequent changes in air pressure require a higher setting compared to locations where the air pressure is typically stagnant.

10.5 Feels Like Temperature

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

At temperatures less than 40°F, the wind chill is displayed, as shown in the National Weather Service Wind Chill Table below:

Figure 15

At temperatures greater than 80°F, the heat index is displayed, as shown in the National Weather Service Heat Index Table below:

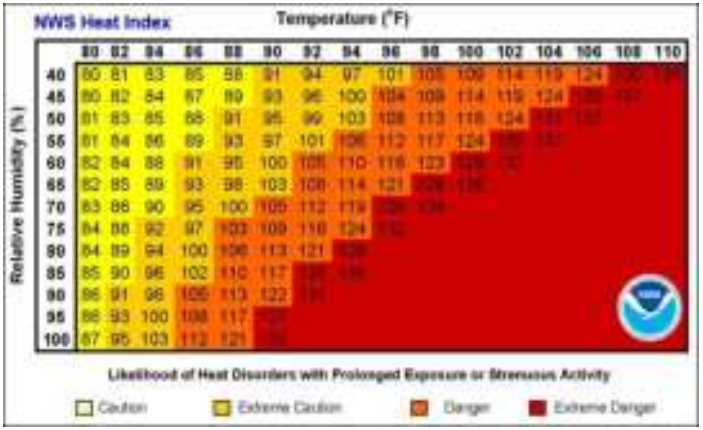


Figure 16

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

11. Specifications

11.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 100m.
- Frequency: 433 MHz
- Integrated Outdoor transmitter interval: 16 seconds

11.2 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Indoor Temperature	32 to 140 °F	± 2 °F	0.1 °F
Outdoor Temperature	-40 to 140 °F	± 2°F	0.1 °F
Indoor Humidity	10 to 99 %	± 5% (only guaranteed between 20 to 90%)	1 %
Outdoor Humidity	10 to 99%	± 5% (only guaranteed between 20 to 90%)	1 %
Rain	0 to 396in	<0.6in: ±0.04in, 0.6in to 396in: ±7%	<39.4in (0.012in) >39.4in (0.04in)
Wind Direction	0 - 360 º	± 10º (16 point compass)	± 1º (16 point compass)
Wind Speed	0 to 112mph	4.5 mph ~22.4mph: ±0.67mph, 22.4mph ~112mph: ±10% (whichever is greater)	0.1mph
Barometric Pressure:	8.85 to 32.50 inHg	± 0.08 inHg	0.01 inHg

11.3 Power Consumption

- Base station (display console) : 3 x AAA 1.5V Alkaline or Lithium batteries (not included)

- Adaptor: 5.9V~ 500mA (included)
- Integrated Outdoor Transmitter: 3xAA alkaline batteries or Lithium batteries (not included)
  Minimum 12 months for Integrated Outdoor Transmitter (use lithium batteries in cold weather climates less than -4 °F), The primary power source is the solar panel.

12. Maintenance

1. Clean the rain gauge and wind transmitter once every 3 months.

- Unscrew the rain collector funnel by turning it 30°counter clockwise.
- Gently remove the rain collector funnel.
- Clean and remove any debris or insects.
- Install the collector funnel after it has been cleaned and completely dried.

Figure 17

A: Remove the rain collector funnel

Figure 18

B: Install the collector funnel.

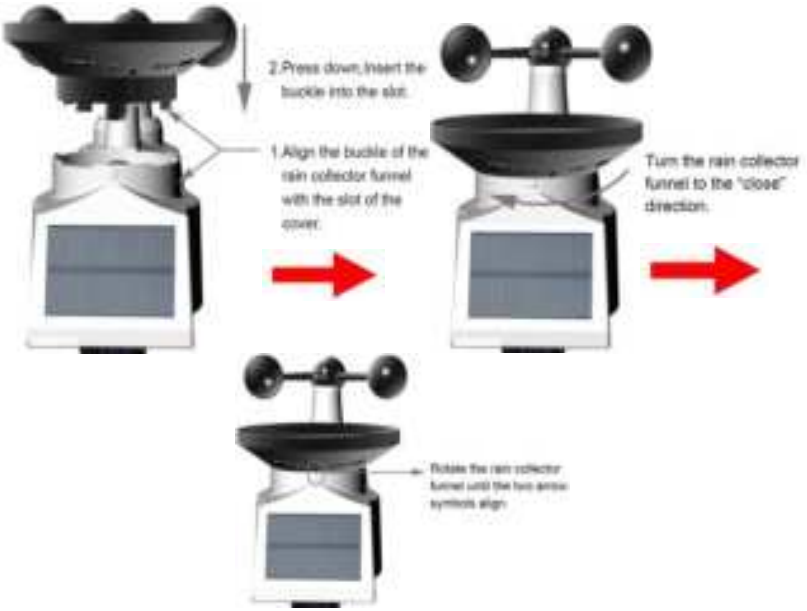


Figure 19

2. Replace the wind, rain and thermo-hygrometer transmitter batteries once every 1-2 years.

13. Troubleshooting Guide

Problem	**Solution**
Wireless remote not reporting in to console. 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, and 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. The maximum line of sight communication range is 300 ft and 100 ft under most conditions. Move the sensor assembly closer to the display console.

	If the sensor assembly is too close (less than 1.5m), move the sensor assembly away from the display console. Make sure the transmitter light is flashing once per 16 seconds. Install a fresh set of batteries in the remote thermo-hygrometer. For cold weather environments, install lithium batteries. Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill). Move the display console around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers. 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 4 °F (the sensor accuracy is ± 2 °F). 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 %).
	Use the calibration feature to match the indoor and outdoor humidity to a known source.
Display console contrast is weak	Replace console batteries with a fresh set of batteries.

14. FCC Statement

1. This device complies with Part 15 of the FCC Rules.Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received,14 including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user’ s authority to op erate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

Manufacturer:

Sainlogic HighTech Innovation Co.,LTD

10342 Cypress Lakes Dr,

Jacksonville, FL 32256

United State

www.sainlogic.com

Email:info@sainlogic.com

Skype：+15087580493

Time: Mon-Sat (10 a.m. - 2 p.m. EST)

FCCID: 2ALHJ-WS020T