

WS0832Professional Weather Station User Manual

1. Introduction

Thank you for your purchase of the WS0832Professional Wireless Weather station. The following user guide provides step by step instructions for installation, operation and troubleshooting.

2. Warnings

⚠ Warning: Any metal object may attract a lightning strike, including your weather station mounting pole. Never install the weather station during 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 take no risks.

3. Getting Started

The WS0832 weather station consists of a display console (receiver), a sensor array with Integrated Outdoor Transmitter and mounting hardware.

Parts List

The WS0832 weather station consists of the following parts (as referenced in Figure 1).

QTY	Item	Image
1	Display Console Frame Dimensions (LxHxW): 135X26X96mm LCD Dimensions (LxW): 111 x 75mm	
1	Integrated Outdoor Transmitter Dimensions (LxHxW) : 330x150x280mm	
1	Foot Mounting (with pole insert) Dimensions: 84x 152 x 216mm	

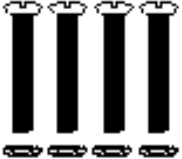
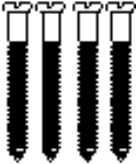
QTY	Item	Image
1	Mounting Bracket Back Plate (pole mount) Dimensions: 76 x 102 x 38mm	
1	Mounting Pole Dimensions: 76 x 76 x 25mm	
2	Pole mounting nuts (M3) / bolts Ø3)	
4	Pole mounting nuts (M5) / bolts (Ø5)	
4	Tapping screws	
1	Manual	
1	Power Adapter	

Figure 1

3.2 Recommended Tools

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

3.3 Setup of Sensor

The following illustration shows the full segment for Thermo-Hygrometer , WIND,RAIN and UV INDEX sensor. purposes only ,as shown in Figure 2.

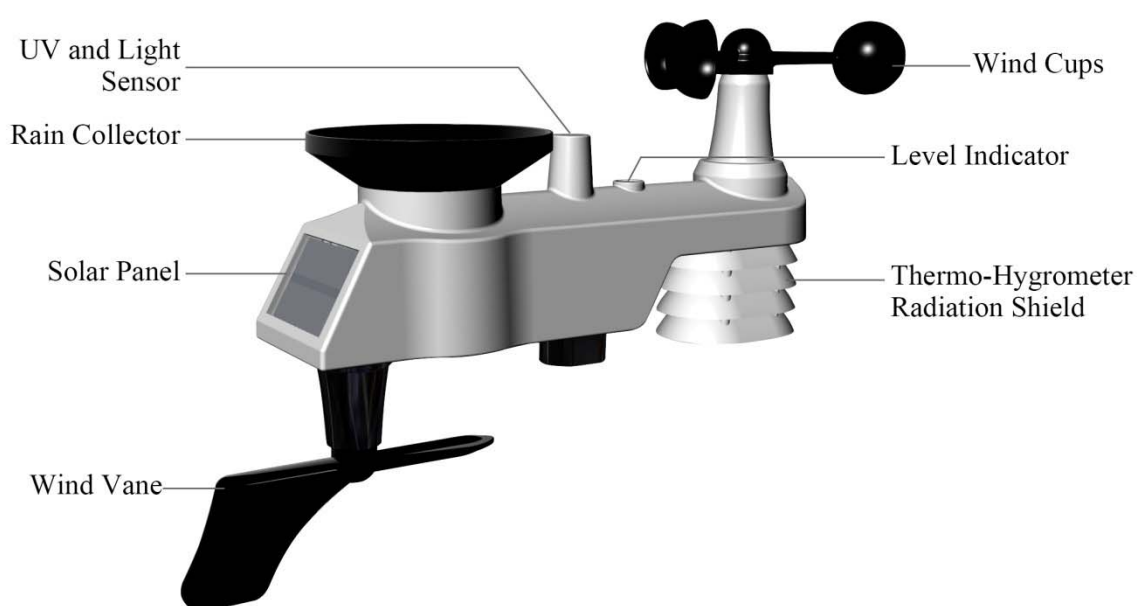


Figure 2

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

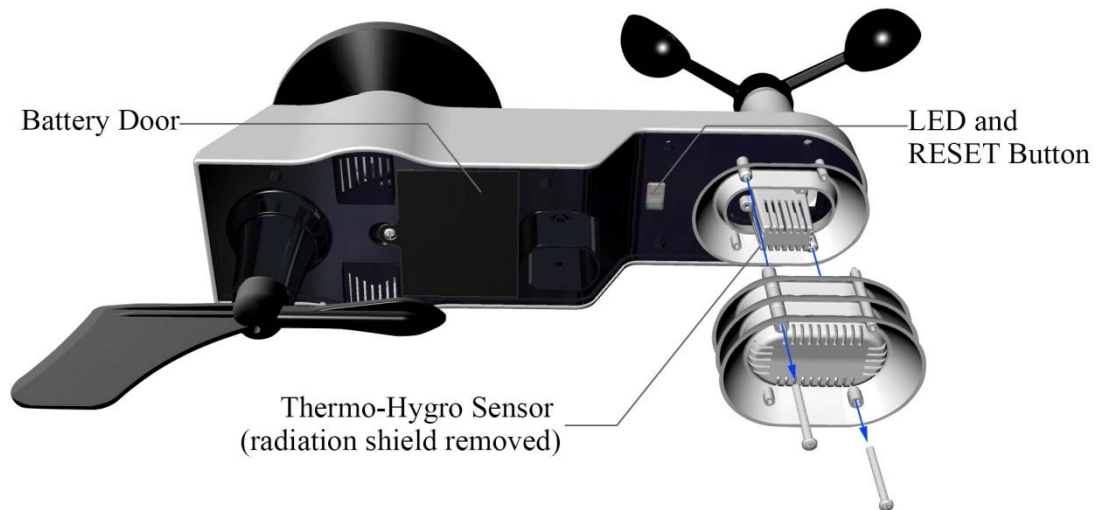


Figure 3

Remove the battery cover 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 show 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. 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 shown in Figure 6.

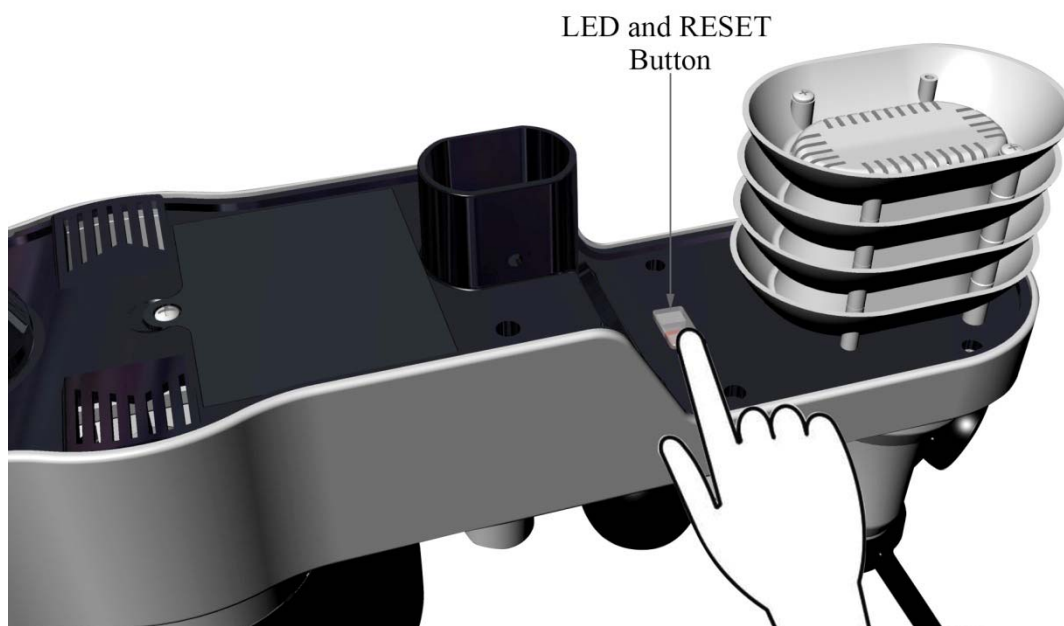


Figure 6

3.4 Display Console

3.4.1 Display Console Layout

The display console layout is shown in Figure 7

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

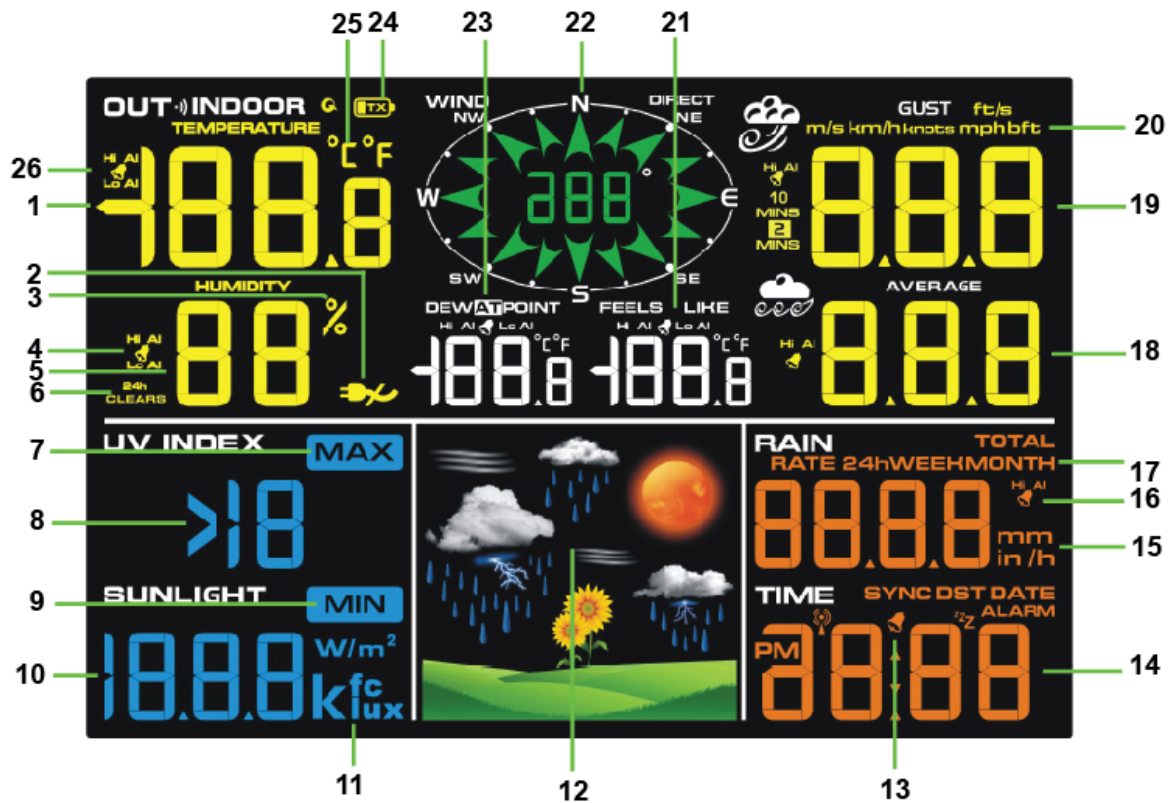


Figure 7

- | | |
|---|--|
| 1. Out/Indoor temperature display | 14. Time, date and year |
| 2. AC off icon | 15. Rainfall units of measure |
| 3. Out/Indoor humidity units of measure (%) | 16. Rainfall HI alarm icon |
| 4. Out/Indoor humidity HI/LO alarm icon | 17. Rainfall display (RATE, 24h, WEEK, MONTH, TOTAL) |
| 5. Out/Indoor humidity display | 18. Wind speed average display |
| 6. Min/Max reset for 24h icon | 19. Wind gust display |
| 7. Maximum recode mode | 20. Wind speed units of measure |
| 8. UV Index display | 21. Feels like HI/Lo alarm icon |
| 9. Minimum recode mode | 22. Wind direction |
| 10. Sunshine intensity | 23. Dew point and AT (Apparent Temperature) display icon |
| 11. Sunlight units of measure | 24. Integrated outdoor transmitter Low power indicator |
| 12. Weather forecast | 25. Out/Indoor temperature units (°F or °C) |
| 13. Time alarm icon | 26. Out/Indoor temperature HI/LO alarm icon |

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 3m away from the console and within 30m of the console. If the weather station is too close or too far away, it may not receive a proper signal.

Remove the battery case on the back of the display, as shown in Figure 11. 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.

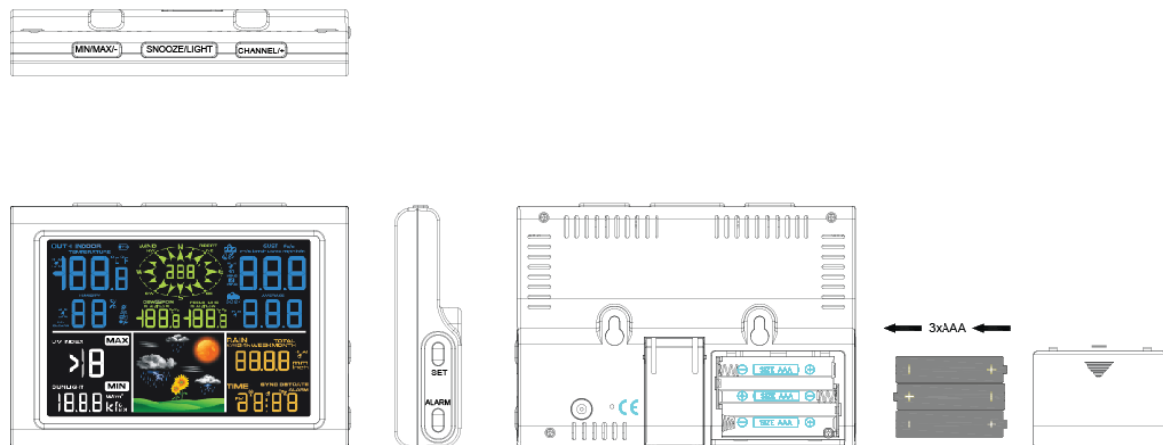


Figure 8

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

The unit will instantly display indoor temperature, humidity, tendency, and time. The wind speed, wind gust, wind direction, rain, UV/Sunlight, Integrated 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 12

1: Fold out the desk stand and see **DC jack** on the left ; as shown in Figure 13

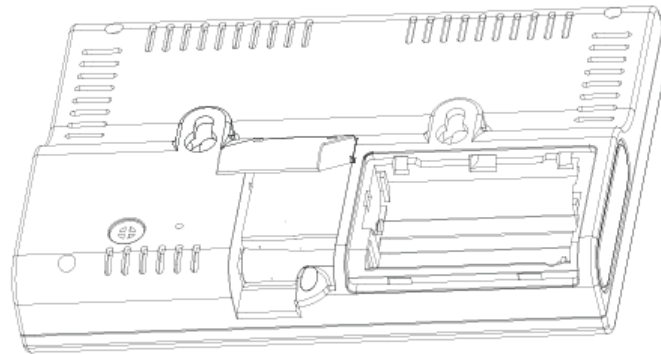


Figure 13

2: Insert the **DC plug** correctly ; as shown in Figure 14

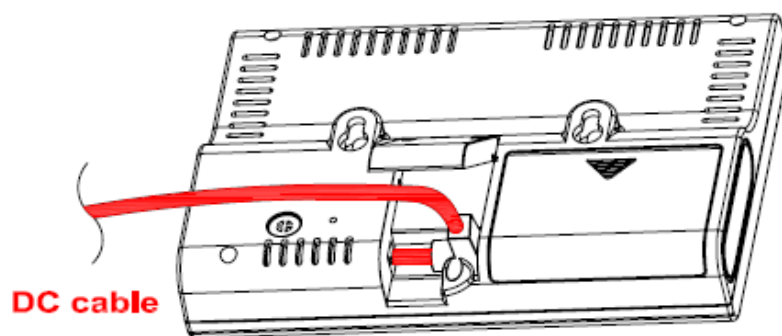


Figure 14

3: If you want to put it on a table or cabinet, opened the desk stand and turn the **DC plug** up until 90 degrees; as shown in Figure 15

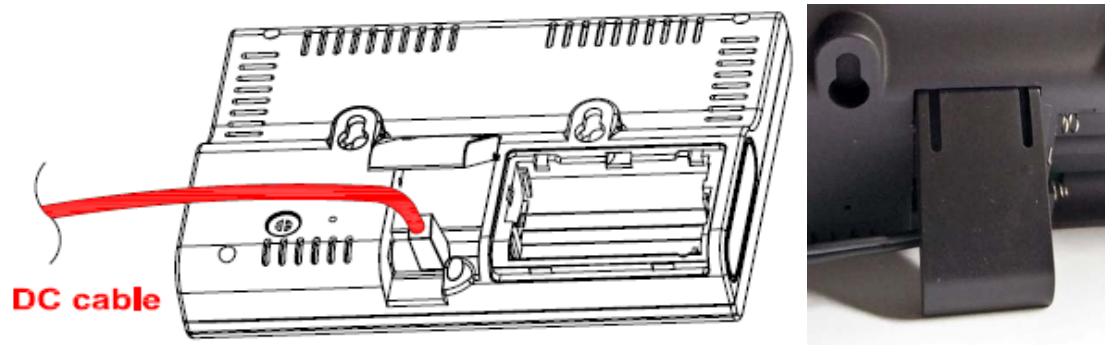


Figure 15

4: If you want to hang on the wall, turn the **DC plug** down until 0 degrees and closed the desk stand; as shown in Figure 16

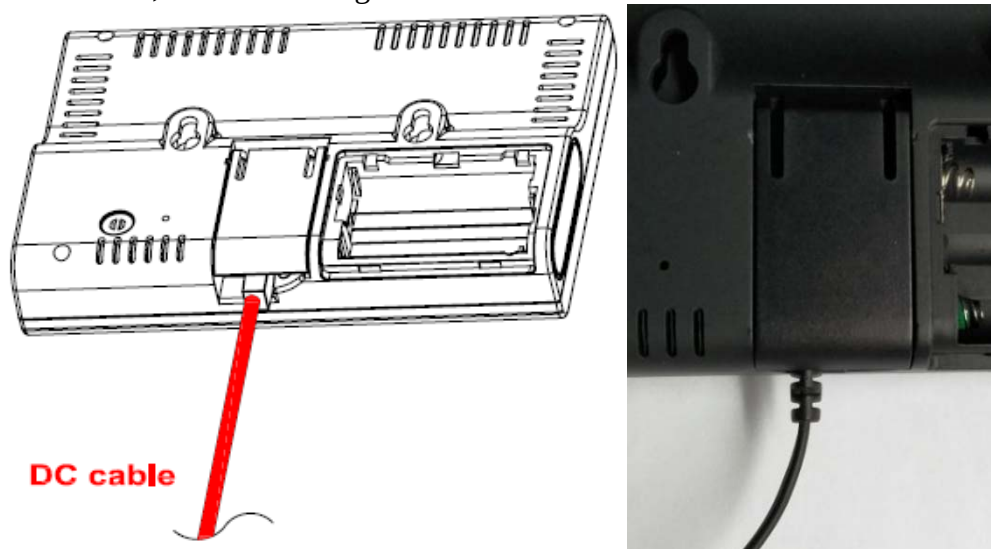


Figure 16

 **Note:** If the power adapter is not plugged in, the icon  will display .

3.4.2 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 0.3mm 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 3m apart). The sensors should be within 2°C (the accuracy is $\pm 1^\circ\text{C}$). 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 3m apart). The sensors should be within 10% (the accuracy is $\pm 5\%$). 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 one years. 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 6m tall, install $4 \times 6\text{m} = 24\text{m}$ 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 100 m, 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 30m 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 100 m line of sight (no interference, barriers or walls) but typically you will get 30 m 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 Sensors

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.

5.1. 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.

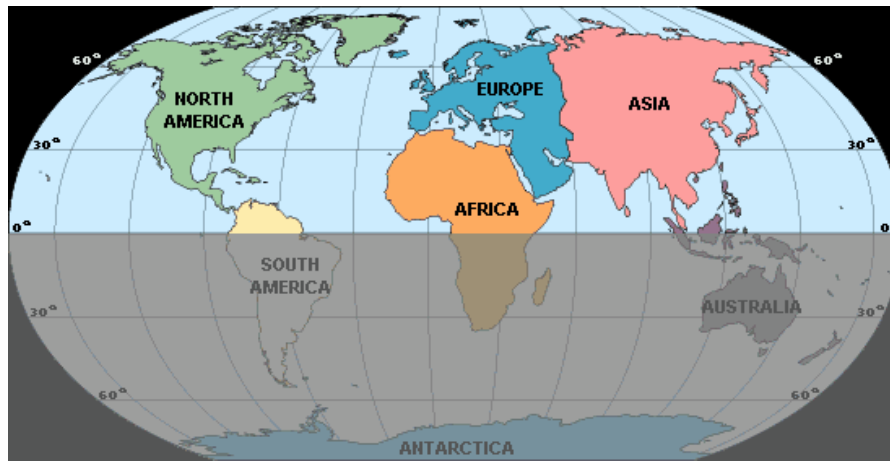
Step 1: There is a “S” indicator on the wind vane that indicates South, as shown in Figure 13. Align this “S” marker in the direction of South.

Step 2: Console operation is set to Northern Hemispheres (**NOR** in the time area) in Location division.

 **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

Figure 13

5.2. Southern Hemispheres (SOU).

For Southern Hemisphere installations, ignore these (N, S, E, W) and face **the solar panel to the North** (and in a sunny position) when installing the Integrated outdoor transmitter.

Step 1: Install the Integrated outdoor transmitter and face the solar panel North.

Step 2: Console operation is set to Southern Hemispheres (**SOU** in the time area) in Location division.

 **Note:** Console has to be location division setting so that the directions on the sensor are matching with your real location. Permanent wind direction error (read approximately 180°) will be introduced when the wind direction sensor is not positioned correctly during installation.

Fasten the integrated transmitter to mounting pole brackets with foot-mounting, two $\phi 3$ bolts and M3 nuts , as shown in Figure 14



Figure 14

Tighten the mounting pole to your existing mounting pole with the four ϕ 5 Bolts and M5 Nuts assembly, or fix on the wall with four tapping screw, as shown in Figure15.



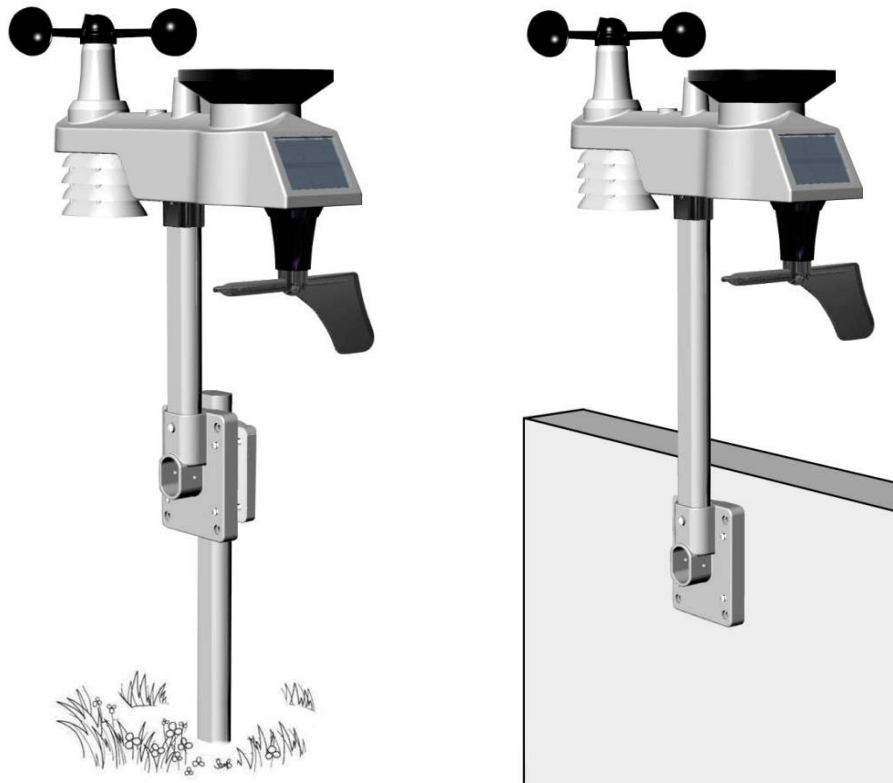


Figure 15

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 **ALARM** key on the right side, **MIN/MAX/-** key, **SNOOZE/LIGHT** and **CHANNEL/+** key on the top.

7.1 Quick Display Mode

 **Note:** To exit the Quick Display Mode at any time, press the **SNOOZE** key 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, date and year,
- twice for out or indoor temperature and humidity alarm on/off view
- three for rainfall.
- four for outdoor dew point temperature
- Five for wind average

1. **Time, Date and Year.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between time, date and year.
2. **Indoor Temperature.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between out/indoor for temperature and humidity alarm on/off view
3. **Rainfall.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between rate, 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 five seconds until total rain reads 0.0.
4. **Dew Point.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between outdoor AT (Apparent Temperature) and dew point.
5. **Wind Average.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between current, 2mins and 10 minutes.

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** button of the display console.

1. **12/24 Hour Format (default: 24h):** 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: DATE):** Press the **SET** key again to enter the day/month format mode. Press the **[+]** key to switch between MM-DD, DD-MM.
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 (CLEARS). 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: °C):** Press the **SET** key again to change the temperature units of measure (the **UNITSET** icon will be displayed). Press the **[+]** key or **[-]** key to switch between °F and °C units of measure.
10. **Wind Speed Units of Measure (default: m/s).** 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, ft/s, bft, knots, mph or km/h.
11. **Rainfall Units of Measure (default: mm).** Press the **SET** key again to change the Rainfall units of measure. Press **[+]** key or **[-]** key to toggle the rainfall units between mm and inch.

12. **Pressure Threshold Setting (default level 2).** Press the **SET(MODE)** key again to change the pressure threshold. Press the **[+]** key or **[-]** key to change pressure threshold 2 mbar/hour to 4 mbar/hour.(For detailed information of this part please refer to 9.5)
13. **Weather Icons Setting (default: partly cloudy).** Press the **SET** key again to change the initial weather icon. Press the **[+]** key or **[-]** key to select the initial weather icon of Sunny, Cloudy, Partly Cloudy or Rainy. (For detailed information of this part please refer to 9.1 and 9.2)
14. **Sunlight Display Units(default: W/m²).** Press the **SET** key again to change the sunlight units of measure. Press the **[+]** key or **[-]** key to toggle the sunlight units between , **W/m²** , **fc** or lux.
15. **Location division.(default: Northern Hemisphere).**Press the **SET(MODE)** 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 **CH/+** button for 3 seconds to enter the sensor search mode.

7.4 Reset Min/Max record



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

In normal mode, press (do not hold) the **MIN/MAX/-** key, the **MAX** icon will be displayed in UV INDEX area. Press the **SET** key to view max values of rainfall (rate, 24h, week or month) , OUT or Indoor temperature and humidity ,outdoor temperature and humidity(AT or dew point).

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

Press the **MIN/MAX/-** key again (do not hold), the **MIN** icon will be displayed. Press the **SET** key to view min values of out/indoor temperature/humidity and outdoor (AT or dew point)

Press the **MIN/MAX/-** key for three seconds(and the **CLR** character is flashing in time area) to clear all min values.(Indoor and out temperature and humidity minimum values. The minimum values will now display the current values).

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

7.6 Snooze Mode

If the alarm sounds, and you wish to silence the alarm, press the **SNOOZE** key, the backlight will turn on. The alarm icon will continue to flash and the alarm will silence for

five minute. press any key (**MIN/MAX/+ ,SET, ALARM,CHANNEL/+**) to permanently exit the **Snooze** mode.

7.7 Back light Mode

If the LED is off, Press the **SNOOZE** button once. The backlight will turn on for five seconds, and if no operation is performed for three seconds, the backlight will turn off.

The backlight operation is different when operating on batteries to save power.

ADJUSTABLE BACKLIGHT BRIGHTNESS

There are 3 levels of brightness of backlight. When the backlight is on press SNOOZE key to switch between the 3 levels.

When backlight is off, press and hold the **SNOOZE** key for two seconds, the backlight will turn on permanently

To turn off the backlight at any time press and hold the **SNOOZE** key for two seconds, the backlight will turn off (visible after 10 seconds).



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 WS0832 includes the following alarms:

- Time
- Out Temperature
- Out Humidity
- Out AT(Apparent Temperature)
- Out Dew Point
- Out Feels Like Temperature
- Wind Gust
- Wind Average
- Rate Rainfall
- 24 Hour Rainfall
- Indoor Temperature
- Indoor Humidity

8.1 Alarm Operation

When an alarm condition is exceeded, the alarm icon will flash  (visual) and the alarm beeper will sound (audible). To silence the beeper, press any key.

8.2 Viewing the High and Low Alarms

To view the current alarm settings, press the **ALARM** key to enter the alarm mode.

ALARM will be displayed in the time area. At the same time Alarm time parameters of out/indoor temperature/humidity, rain rate, AT, 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** key at any time to return to the normal mode.

8.3 Setting the Alarms

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 [+] 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** 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
2. Alarm minute
3. Outdoor temperature high alarm
4. Outdoor temperature low alarm
5. Outdoor humidity high alarm
6. Outdoor humidity low alarm
7. Outdoor AT high alarm
8. Outdoor AT low alarm
9. Outdoor dew point high alarm
10. Outdoor dew point low alarm
11. Outdoor feels like high alarm
12. Outdoor feels like low alarm
13. Wind Gust high alarm
14. Wind Average high alarm
15. Rainfall (RATE) high alarm
16. Rainfall (24h) high alarm
17. Indoor temperature high alarm
18. Indoor temperature low alarm
19. Indoor humidity high alarm
20. Indoor humidity low alarm

 **Note:** To prevent repetitive temperature alarming, there is a 0.5 °C tolerance band. For example, if you set the high alarm to 26.7 °C and silence the alarm, the alarm icon will continue to flash until the temperature falls below 26.2°C, at which point, the alarm will reset and must increase above 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.

9. Other Console Features

The following section describes additional features and display icons.

9.1 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.

9.2 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.

9.4 Feels Like Temperature and AT

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

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

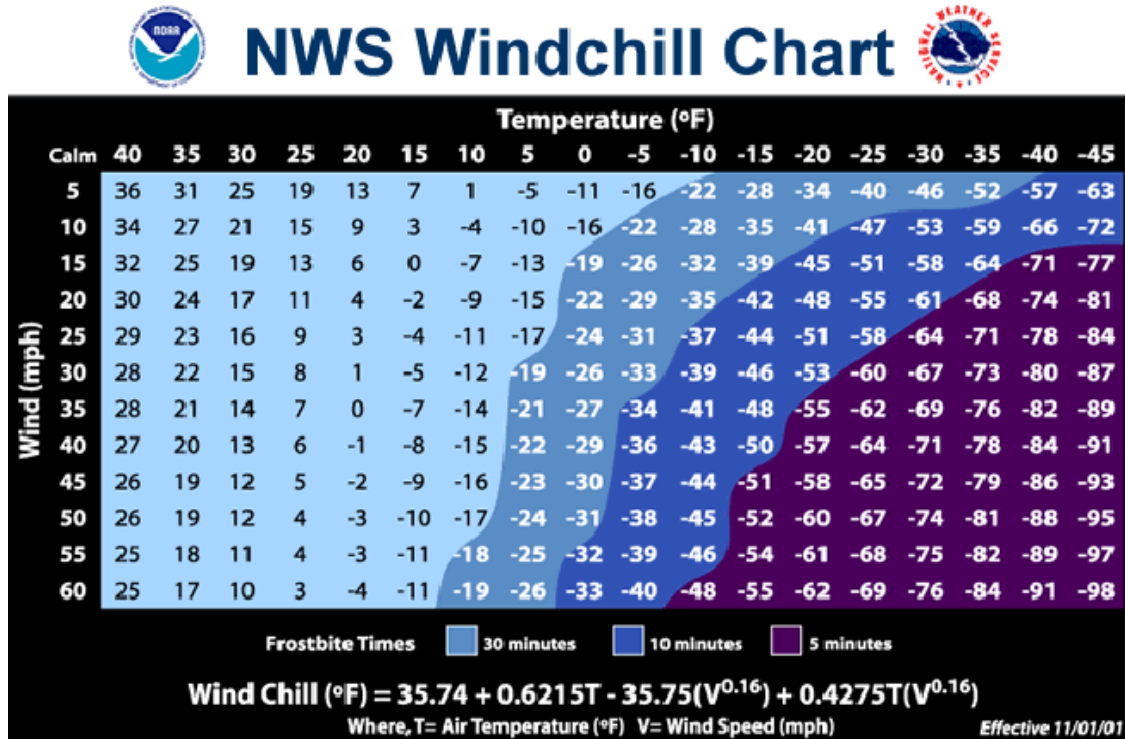


Figure 17

At temperatures greater than 26.7C(80°F), the heat index is displayed, as shown in the National Weather Service Heat Index Table below:

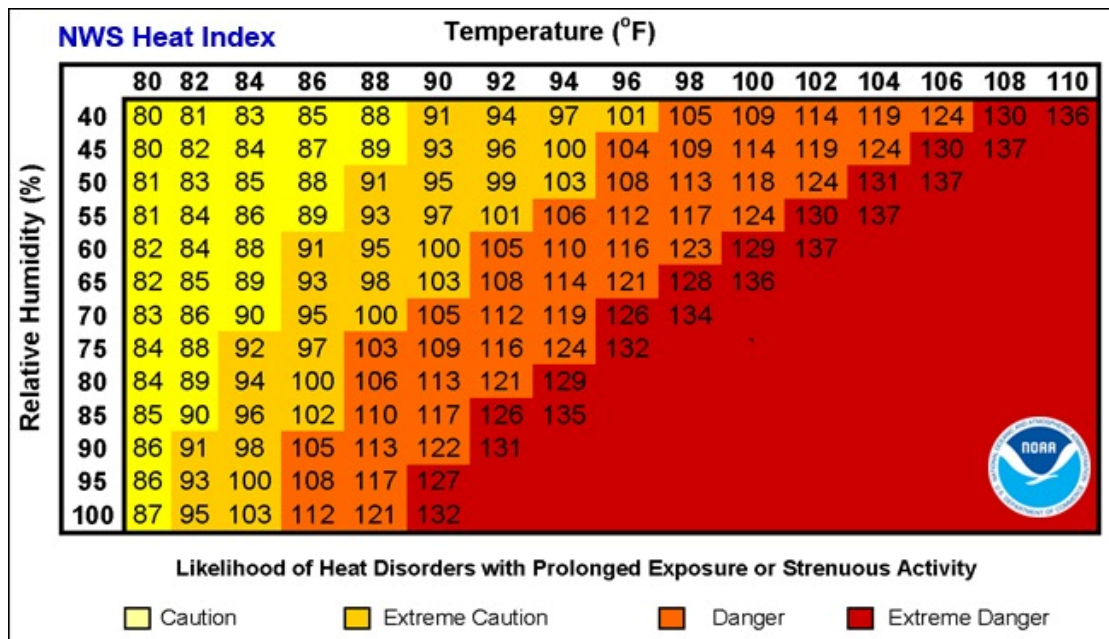


Figure 18

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).

The concept of apparent temperature (AT) is a linear regression that is not restricted, and is more appropriate to outside conditions because it includes wind. and was intended as an assessment of what exposed body surfaces feel like in cold, windy conditions. Regression equations of this universal scale are formulated for indoors, outdoors in shade but exposed to wind, and outdoors exposed to wind and solar radiation. Of these, outdoors in shade but exposed to wind, has been chosen as most informative.

9.5 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.

9.6 Restore Factory Default

To restore the console to factory default (Alarm and display), press the MIN/MAX/- key while installing the batteries at the same time. Wait 3 seconds after installing the batteries to let go of the MIN/MAX /- key.

10. Specifications

10.1 Wireless Specifications

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

10.2 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Indoor Temperature	0 to 60 °C	± 1 °C	0.1 °C
Outdoor Temperature	-40 to 60 °C	± 1 °C	0.1 °C
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 %
UV Index	1 to 15+	± 1	± 1
Sunlight	0 to 200klux	± 15%	± 15%
Rain	0 to 9999mm	<15mm:±1 mm, 15mm to 9999mm:±7%	<1000mm (0.3mm) >1000mm (1mm)
Wind Direction	0 - 360 °	± 10° (16 point compass)	± 1° (16 point compass)
Wind Speed	0 to 50 m/s	2 m/s ~10 m/s: ±3m/s, 10m/s ~50 m/s: ±10% (whichever is greater)	0.1 m/s

10.3 Power Consumption

- Base station (display console) : 3 x AAA 1.5V Alkaline or Lithium batteries (not included)
- Adaptor: 6V~ 500mA (included)
- Integrated Outdoor Transmitter: 3xAA alkaline batteries or Lithium batteries (not included)
- Battery life: Minimum 12 months for base station with excellent reception. Intermittent reception may reduce the battery life.
Minimum 12 months for Integrated Outdoor Transmitter (use lithium batteries in cold weather climates less than -20 °C), The primary power source is the solar panel. The batteries provide backup power when there is limited solar energy
Minimum 12 months for sensors (use lithium batteries in cold weather climates less than -20 °C)

11. Maintenance

1.Clean the rain gauge of Integrated Outdoor 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 52

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

12. Troubleshooting Guide.

Problem	Solution
Wireless remote not reporting in to 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 100 m and 30 m 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 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 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.
There are dashes (--.-) on the display console.	

Problem	Solution
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 (the sensor accuracy is ± 1 °C). 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.

FCC Statement

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Warning: The user should be 20CM away from the product when it is used.