WS036A Professional WiFi Weather Station

User Manual

1.Introduction

Thank you for your purchase of the WS036A Professional WIFI Wireless Weather Station. The following user guide provides step by step instructions for installation, operation and troubleshooting.

2.Warnings and Cautions

⚠**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.

3.Getting Started

The WS036A weather station consists of a display console, a sensor array with Integrated Outdoor Sensor, and mounting hardware.

3.1 Parts List

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

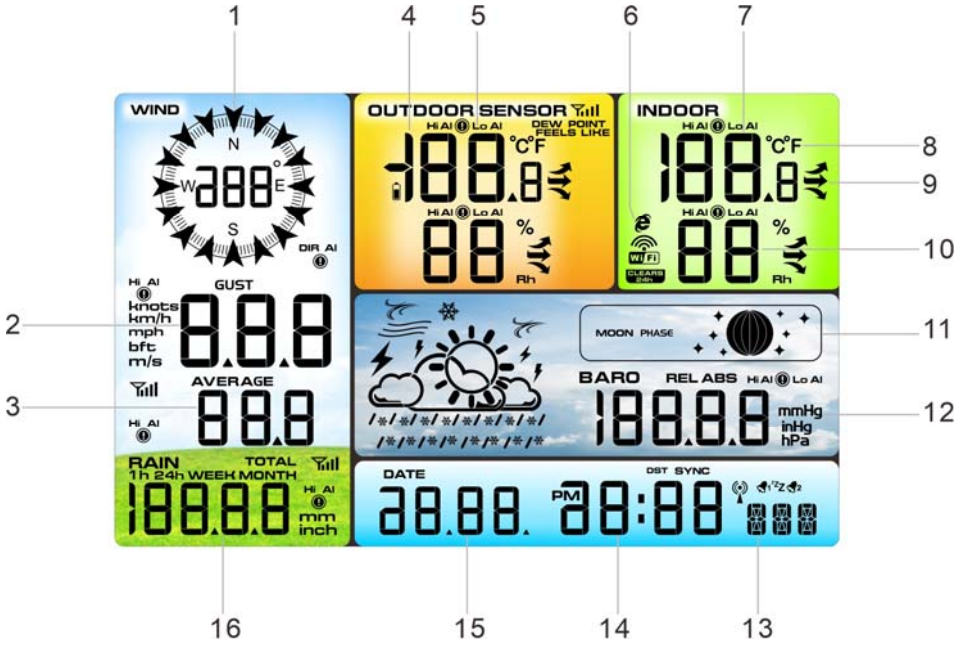
QTY	Item	Image
1	**Display Console** **Frame Dimensions** : 6.5X 5.32X 0.71inch (165×135×18mm） **LCD Dimensions:** 5.12 x 316inch(130×80mm)	
1	Manual	
1	Power Adapter	

Figure 1

3.4 Display Console

3.4.1 Layout of Display Console

The following illustration shows display console features in normal mode as below :



1. Wind direction icon
2. Wind gust display
3. Wind average display
4. Outdoor temperature display
5. Outdoor temp HI/LO alarm icon
6. WiFi network signal icon
7. Indoor temperature display
8. Temperature units (°F or °C)
9. Temperature rate of change icon
10. Indoor Humidity display
11. Moon Phase and Weather forecast icon
12. Pressure (REL and ABS)
13. Weeks and Seconds
14. Time display
15. Date or Year
16. Rainfall display(1H,24h,WEEK,MONTH, TOTAL)

3.4.2 Setup the Display Console

1. Plug in the display console with power adapter. BL ON will display in the time area for three seconds when powered up.

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

2. Display Console Batteries Installation

Remove the battery door on the back of the display, as shown in Figure 4. Install three AAA (alkaline or lithium) batteries. The display will beep once and layout of display will light up for a few seconds to verify all segments are operating properly.

Figure 4

Recover the battery door, and unfold out the desk stand to place the console in the upright position

- **Note:** The battery is a back-up of weather station console, saving console settings when powered off from adaptor.

Note: The transmitter of Wifi 2.4G & other wireless functions can not work when using the battery.

3.4.3 Connect Sensors with Display Console

Once the display console is powered up, it will automatically scan all the nearby Integrated Outdoor sensors.

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: While in the search mode, the remote search icon will be constantly displayed until all the measured values received. The console will automatically switch to the normal mode from which all further settings can be performed.

When connected with the Integrated Outdoor Sensor, the measured value (Outdoor temperature, humidity, wind speed, wind direction, wind gust and average, rainfall, Dew point and feels like) will show up on the display console.

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.

3.5 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 Integrated outdoor sensor South and North(S and N molded on the body of the outdoor sensor) several times. You will heard a “ticking” sound within the rain gauge. Verify the rain reading on the display console is not reading 0.00. Each “ticking” represents 0.01 inch 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 in/outdoor temperature.** Verify the indoor and outdoor temperature match closely with the console and sensor array 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°C). Allow about 30 minutes for both sensors to stabilize.

4. Verify proper operation of in/outdoor humidity. Verify the indoor and outdoor humidity. Verify the indoor and outdoor humidity match closely with the console and sensor array 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 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.

5.Display Console Operation

7.1 Quick Display Mode

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

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, time/week and second
- Twice for rainfall
- three for pressure
- four for outdoor temperature

1. Time, Time/Week and Second. Press the *CHANNEL/+* or *MAX/MIN/-* key to toggle between time, time/week and second.

2. Rainfall. Press the *CHANNEL/+* or *MAX/MIN/-* key to toggle between 1h, 24h, week, month and total.

To clear the total rain, press the *CHANNEL/+* or *MAX/MIN/-* 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.

3. Absolute Pressure and Relative Pressure. Press the *CHANNEL/+* or *MAX/MIN/-* key to toggle between absolute pressure and relative pressure.

4. Outdoor Temperature. Press the *CHANNEL/+* or *MAX/MIN/-* key to toggle between outdoor temp, 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 ***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.

1. **12/24 Hour Format (default: 12h).** Press the *SET* key again to adjust the 12/24 hour format setting. Press the *CHANNEL/+* key or *MAX/MIN/-* key to change between 12 hour and 24 hour format.
2. **Change Hour.** press the *SET* key again to set the hour. Press the *CHANNEL/+* key or *MAX/MIN/-* key to adjust the hour up or down. During afternoon hours the PM icon will display.
3. **Change Minute.** Press the *SET* key again to set the minute. Press the *CHANNEL/+* key or *MAX/MIN/-* key 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 *CHANNEL/+* or *MAX/MIN/-* key to switch between M-D,D-M.
5. **Change Month.** Press the *SET* key again to set the calendar month. Press the *CHANNEL/+* key or *MAX/MIN/-* key to adjust the calendar month.
6. **Change Day.** Press the *SET* key again to set the calendar day. Press the *CHANNEL/+* key or *MAX/MIN/-* key to adjust the calendar day.
7. **Change Year.** Press the *SET* key again to set the calendar year. Press the *CHANNEL/+* key or *MAX/MIN/-* 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 *CHANNEL/+* key or *MAX/MIN/-* key to switch between ON (Clears 24h) and OFF (Manually).
9. **Temperature Units of Measure (default:** °F**):**. Press the *SET* key again to change the temperature units of measure. Press the

CHANNEL/+ key or *MAX/MIN/-* 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 *CHANNEL/*+ key or *MAX/MIN/-* key to toggle the wind speed units between m/s, km/h, mph, knots or bft.

11. Rainfall Units of Measure (default: in**)**. Press the *SET* key again to change the Rainfall units of measure. Press *CHANNEL/*+ key or *MAX/MIN/-* key to toggle the rainfall units between mm and inch.

12. **Barometric Pressure Display Units(default:** InHg**)**. Press the *SET* key again to change the pressure units of measure. Press the *CHANNEL/*+ key or *MAX/MIN/-* key to toggle the pressure units between mmHg, inHg or hPa.

13. **Pressure Threshold Setting (default level 2).** Press the *SET* key again to change the pressure threshold. Press the *CHANNEL/*+ key or *MAX/MIN/-* key to change pressure threshold 2 hPa to 4 hPa. (For detailed information of this part please refer to 10.5)

14. **Weather Icons Setting (default: partly cloudy).** Press the *SET* key again to change the initial weather icon. Press the *CHANNEL/*+ key or *MAX/MIN/-* key to select the initial weather icon of Sunny, Cloudy, Partly Cloudy or Rainy. (For detailed information of this part please refer to 10.2)

15. **Time SYNC(default: ON).** Press the *SET* key again to set the network time sync. Press the *CHANNEL/*+ key or *MAX/MIN/-* key to switch between SYNC time ON/OFF of measure. Synchronize the time of the device with WiFi.

17. **Location Division. (default: Northern Hemisphere).** Press the *SET* key again to change the location division. Press the *CHANNEL/*+ key or *MAX/MIN/-* key to toggle the position of the earth Northern

Hemisphere (NOR) or Southern Hemisphere (NOR). (Refer to 5.0 Final Installation of Sensors)

7.3 Sensor Search Mode

If Integrated Outdoor Transmitter data is lost, touch and hold the ***CHANNEL/+*** button for 3 seconds, the search icon will be displayed constantly for 3 minutes. Once the signal is reacquired, the remote search icon  will turn off, and the current values will be displayed.

7.4 Max/Min Viewing and Reset Mode

7.4.1 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 rainfall (1h, 24h, week or month), wind gust and average, pressure (ABS or REL), outdoor temperature and humidity (feels like or dew point) and indoor temperature and humidity

.

Press the ***MAX/MIN/-*** key for three seconds to clear all Max values.(Rainfall, wind speed, wind gust, pressure, temperature and humidity maximum values).

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

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

7.5.2 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 pressure (ABS or REL), outdoor temperature and humidity (feels like or dew point), and indoor temperature and humidity

.

Press the ***MAX/MIN/-*** key for three seconds to clear all Min values.(pressure, temperature and humidity minimum values).

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

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

7.5 Snooze Mode

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

Press any key (***MAX/MIN/-, SET, ALARM, CHANNEL/+***) to permanently exit the ***SNOOZE*** mode.

7.6 Backlight Mode

7.6.1 Adjustable Brightness of Backlight

There are 3 levels of brightness of display backlight. When the backlight is on with adapter, press ***SNOOZE*** key to switch between the 3 levels.

In the brightest backlight of 3 levels, press the ***SNOOZE*** key to turn off the backlight.

When backlight is off with adapter, press the **SNOOZE** key and the backlight will turn on for 3 levels adjustable backlight.

Note: If the display console plugged into AC adapter power, the time area will display BL ON and the backlight will remain on. It is not recommended leaving the display backlight on for a long period of time when operating on batteries only, or the batteries will run out quickly.

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

8. Alarm Mode

The weather station includes the following alarms:

- Time (Alarm 1 and Alarm 2)
- Outdoor Temperature
- Outdoor Humidity
- Outdoor Dew Point
- Outdoor Feels Like Temperature
- Wind Gust
- Wind Average
- Wind direction
- 1h Rainfall
- 24 Hour Rainfall
- Absolute Pressure
- Relative Pressure
- Indoor Temperature
- Indoor Humidity

8.1 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.

8.2 View High/Low Alarms 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 HI alarm parameters of indoor temperature and humidity, outdoor temperature and humidity, 1h rainfall, wind gust, wind average, wind direction ,absolute pressure are displayed.

Press ***SET*** key to view Alarm 2 time and HI alarm parameters of indoor temperature and humidity, 24h rainfall, outdoor dew point, feels like and relative pressure.
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*** key at any time to return to the normal mode in HI/Low alarm 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 ***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*** key twice 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 HI alarm
6.Wind average HI alarm
7. Wind Direction Alarm
8.Outdoor temp HI alarm
9.Outdoor temp low alarm
10.Outdoor humidity HI alarm
11.Outdoor humidity low alarm
12.Outdoor feels like HI alarm
13.Outdoor feels like low alarm
14.Outdoor dew point HI alarm
15.Outdoor dew point low alarm
16.Rainfall (1h) HI alarm
17.Rainfall (24h) HI alarm
18.Absolute pressure HI alarm
19.Absolute pressure low alarm
20.Relative pressure HI alarm
21.Relative pressure low alarm
22.Indoor temperature HI alarm
23.Indoor temperature low alarm
24.Indoor humidity HI alarm
25.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.

8.4 Alarm and Key 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.

10. Other Features of Display Console

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 changing conditions and is never to be relied upon as an accurate method to predict the weather.

10.2 Weather Icons

Condition	Icon	Description

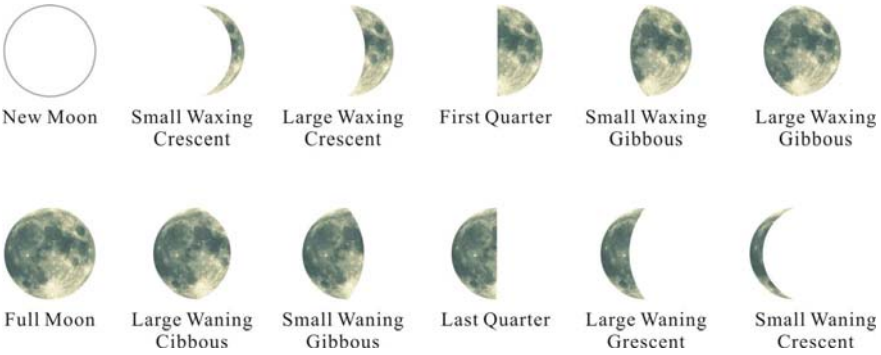
Sunny		Pressure is rising and the previous condition is partly cloudy.
Partly Cloudy		Pressure is falling and the previous condition is sunny or Pressure is rising and the previous condition is cloudy
Cloudy		Pressure is falling and the previous condition is partly cloudy or Pressure is rising and the previous condition is rainy.
Rainy		Pressure is falling and the previous condition is cloudy （snowy icon will display on rainy day and outdoor temperature below 0℃)

10.3 Rate of Change Icon

The rate of change icon indicates if the temperature and humidity are increasing, decreasing or steady, as shown in  . If the arrow points upward, the temperature is increasing at a rate of +2°F per 30 minutes (or greater), or humidity is increasing at a rate of +5% per 30 minutes (or greater). If the arrow points downward, the temperature is decreasing at a rate of -2°F per 30 minutes (or less), or humidity is decreasing at a rate of -5% per 30 minutes (or less).

10.3 Moon Phase

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



10.6 Restore Factory Default

To reset the display console to factory default (WiFi network, Weather server and display), press the ***MAX/MIN/- key*** while plugging in power

adaptor at the same time (Take out batteries before starting the reset operation).

13. Specification

13.1 Measurement Specifications

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)
Indoor Humidity	10 to 99 %	± 5% (only guaranteed between 20 to 90%)	1 %
Barometric Pressure:	300 to 1100 hpa	± 3 hpa	0.1 hpa

13.2 Wireless Specifications

Wireless Transmit Range (in open air):	330ft (100m)
Frequency:	433MHz

13.3 Power Consumption

Display Console	3 x AAA 1.5V Alkaline or Lithium batteries (not included)

Adapter:	5.9V~500mA(included)
Battery life:	Minimum 12 months for sensors (use lithium batteries in cold weather climates less than -20°C(-4°F).

FCC Statement

Statement according to FCC part 15.19:

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

Statement according to FCC part 15.21:

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

Statement according to FCC part 15.105:

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.

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