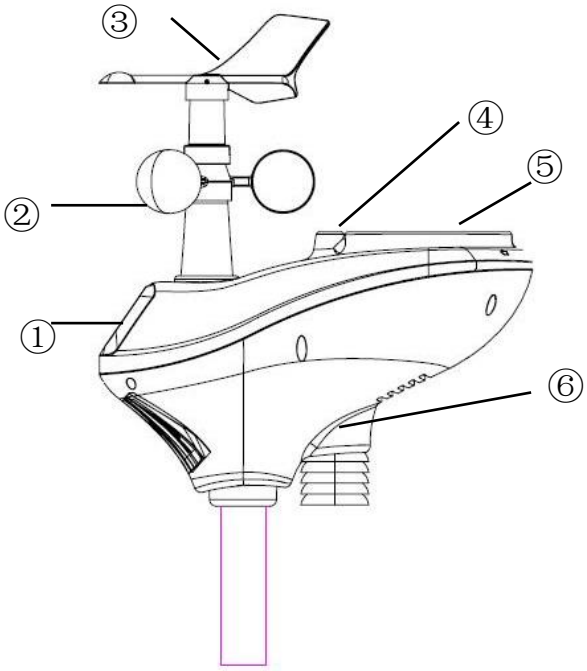
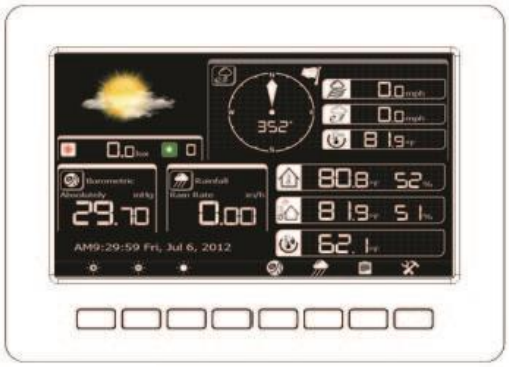
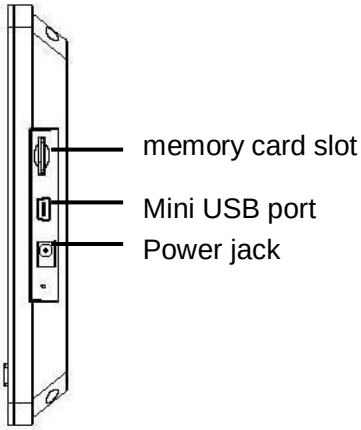
PROFESSIONAL WIRELESS INTERNATIONAL WEATHER STATION

Operation Manual

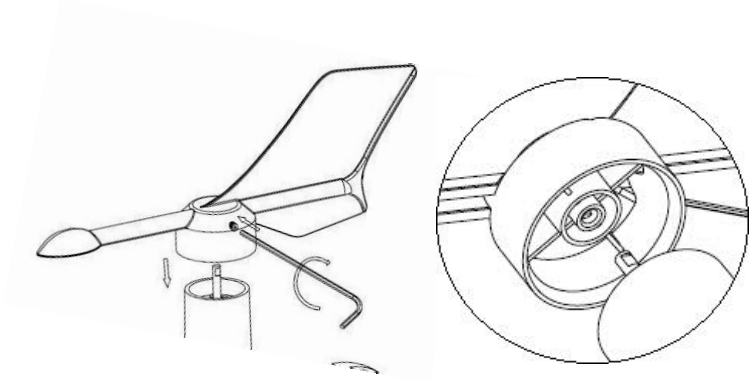
OVERVIEW



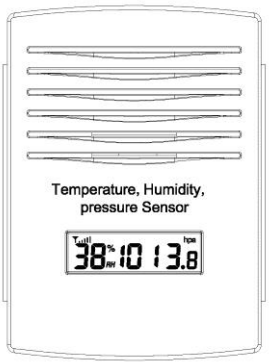




① Solar panel
② Wind Speed Sensor
③ Wind Vane
④ Bubble level
⑤ Rain collector
⑥ Transmitter (thermo-hygro sensor)



Attach the wind vane
Push the wind vane into the shaft.
Tighten the set screw with the Allen Wrench (included), Make sure the wind vane spin freely.



Indoor sensor

Introduction

Thank you for your purchase this professional weather station. The outdoor sensor is solar powered and sends data to the console via a low-power radio. It allows you to upload your weather data to weather website: www.wunderground.com which you can share it with your friend.

This manual will guide you step-by-step through setting up your device. Use this manual to become familiar with your professional weather station, and save it for future reference.

Contents

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

QTY	Item
1	Display Console
1	Outdoor sensor(Thermo-hygrometer / Rain Gauge / Wind Speed Sensor /Transmitter)
1	Wind Vane
1	Indoor sensor
1	5V DC adaptor
1	Pole
2	Pole mounting U-bolt
4	Pole mounting clamps
4	Pole mounting nuts
4	Zip ties
1	User manual

Installation

Before placing and installing all components of the weather station at there final destination, please set up the weather station with all parts being nearby for testing the correct function.

Outdoor sensor

1. Locate the battery door on the thermo-hygrometer / rain gauge transmitter, as shown in **Error! Reference source not found.**. Turn the set screw counter clockwise to loosen the screw to open the battery compartment. Insert 3XAA rechargeable batteries in the battery compartment

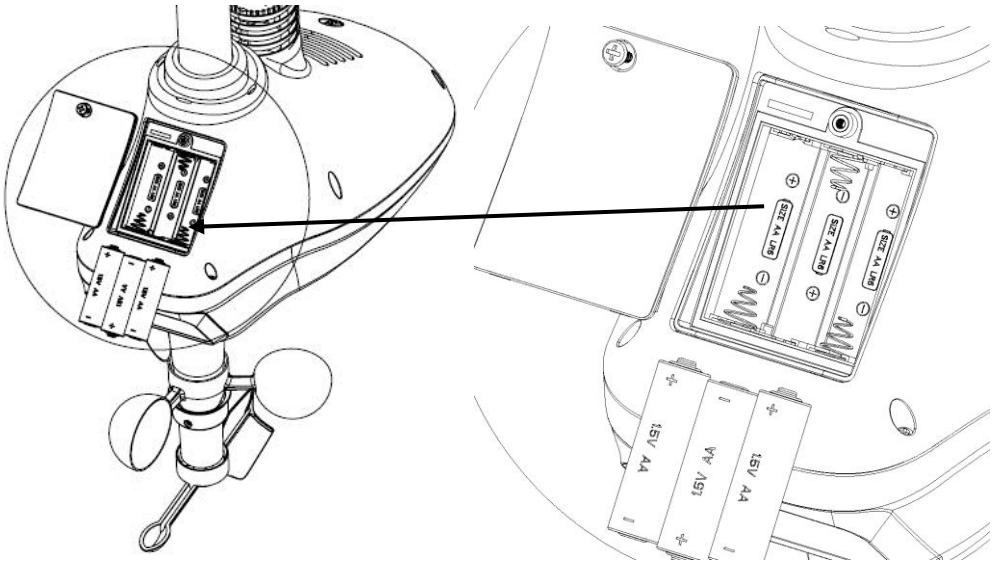


Figure 1

The LED on the back of the transmitter will turn on for four seconds and normally flash once every 16 seconds (the sensor transmission update period).

Note: If no LED light up or is lighted permanently, make sure the battery is inserted the correct way or a proper reset is happened. Do not install the batteries backwards. You can permanently damage the thermo-hygrometer.

2. Insert the pole into the base, as shown in figure 2. Spin the lid onto the base as shown in figure 3.

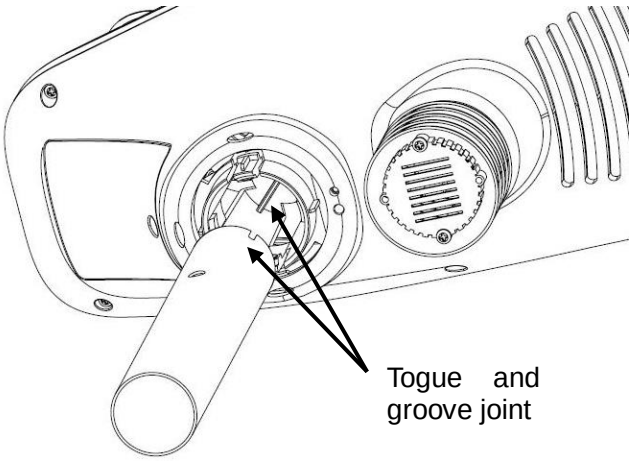


Figure 2

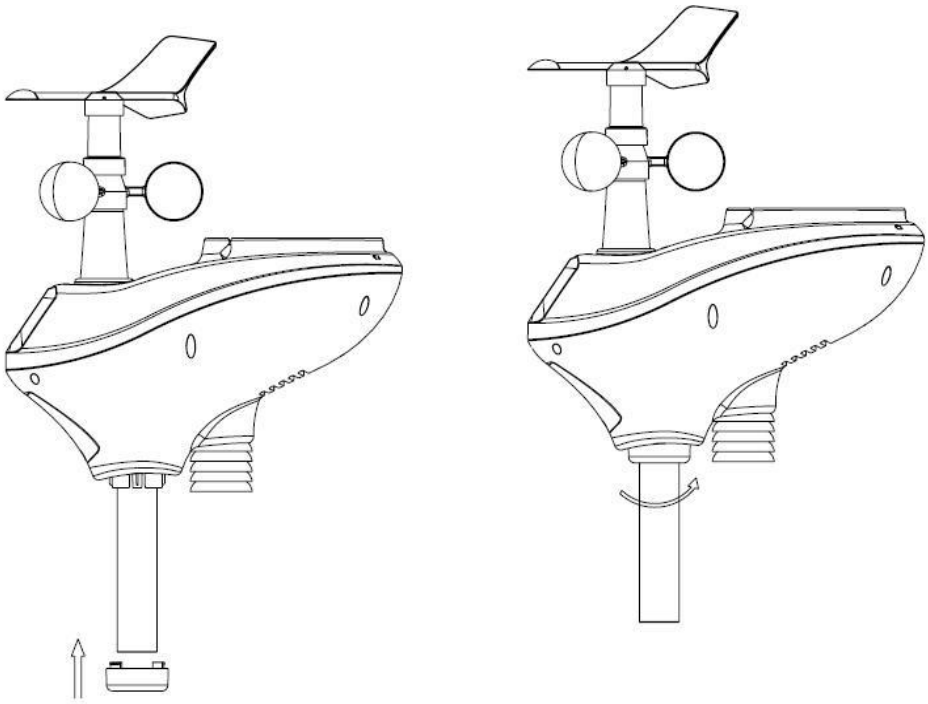


Figure 3

3. Fasten the mounting pole to your mounting pole or bracket (purchased separately) with the two U-bolts, mounting pole brackets and nuts, as shown in Figure 4.

Tighten the mounting pole to your mounting pole with the U-Bolt assembly, as shown in **Error! Reference source not found.**.

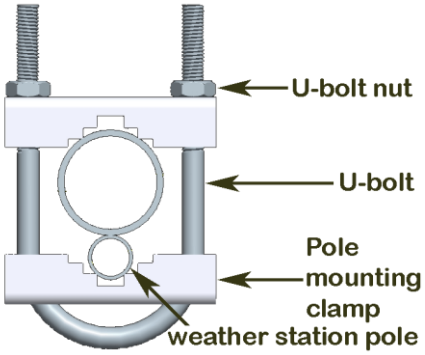


Figure 4

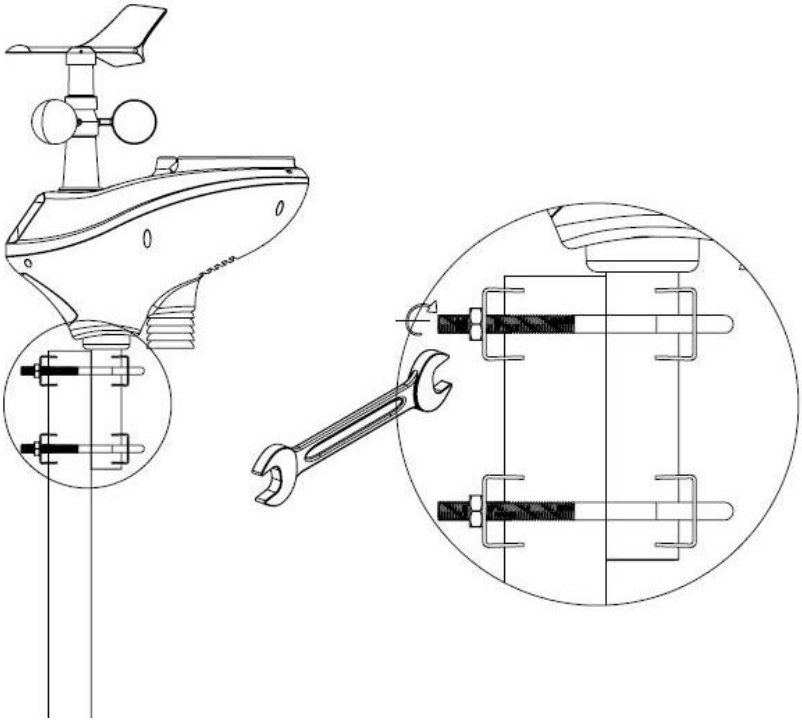
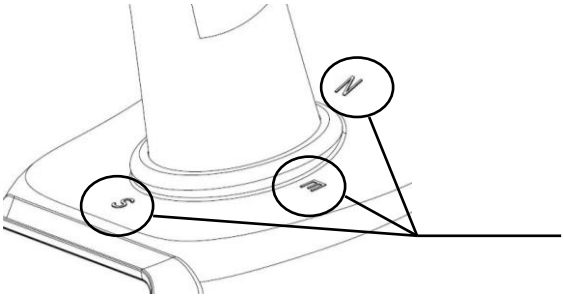
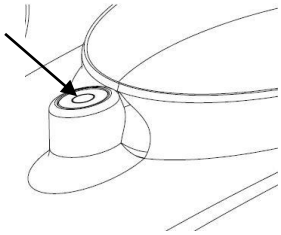


Figure 5



there are four alphabet letter of “N”,”E”,”S”and “W” representing for the direction of North, East, South and West, as Figure 6. 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

Figure 6



Level the sensors
Use the bubble level on the rain sensor as a guide to verify that sensors are level.

Figure 7

indoor sensor

Remove the battery door on the back of the sensor with a Philips screwdriver (there is only one screw, at the bottom of the unit). Insert two AAA batteries as shown in **Error! Reference source not found.** (we recommend lithium batteries for cold weather climates, but alkaline batteries are sufficient for most climates).

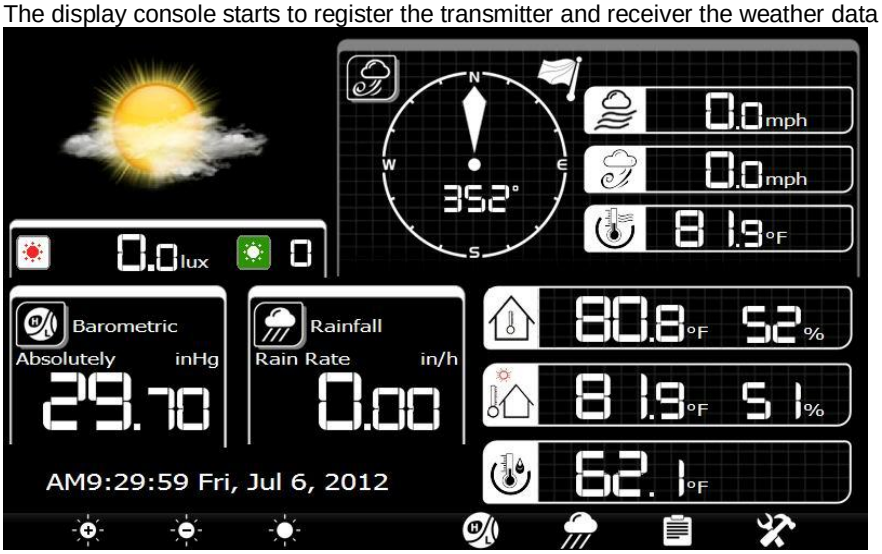
Replace the battery door and set screw. Note that the temperature, humidity and pressure will be displayed on the LCD display. Looking at the back of the unit from left to right, the polarity is (-) (+) for the top battery and (+) (-) for the bottom battery.

Figure 8

Initial Display Console Set Up

Connect the power adapter to power up the display console. The initial interface as below

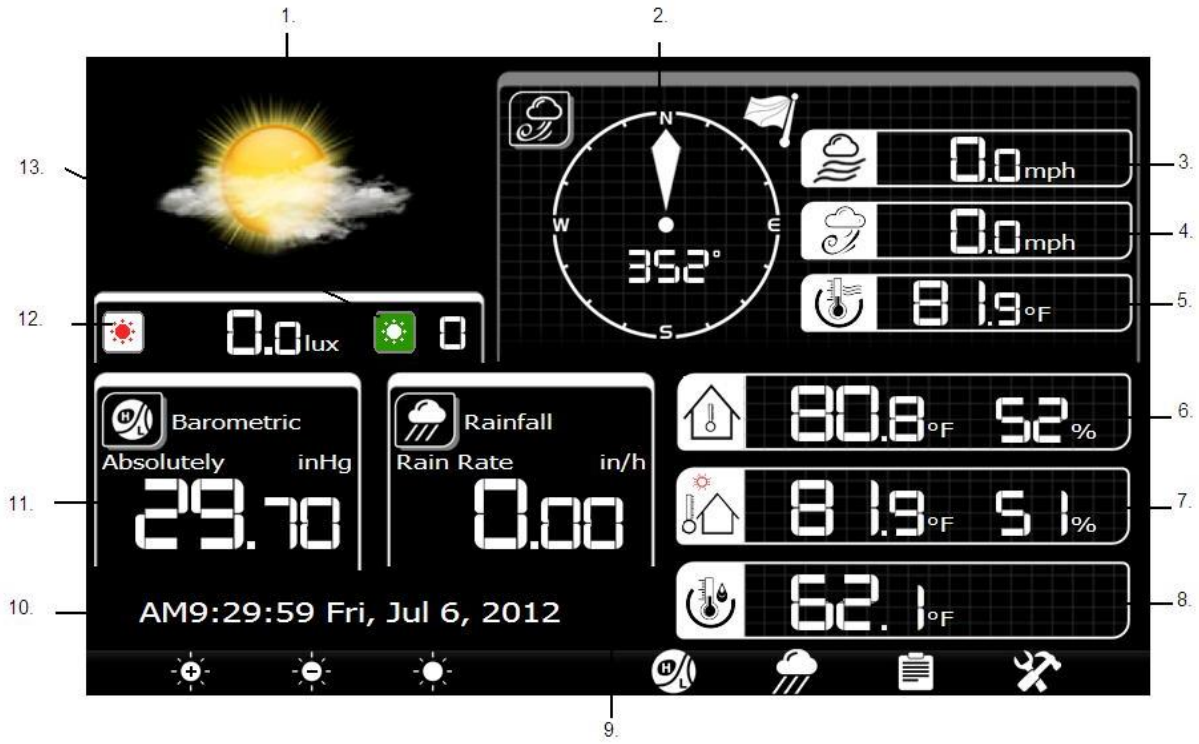
The display console starts to register the transmitter and receiver the weather data from transmitter.. The interface as below:



Then it start to scan the WLAN, if it didn't found the WLAN it will shows" not find any AP (Access Point)". Press  key to return to normal display mode. Only after connect to WLAN you can upload the data to weather website.

Program Mode

1. Normal display Mode



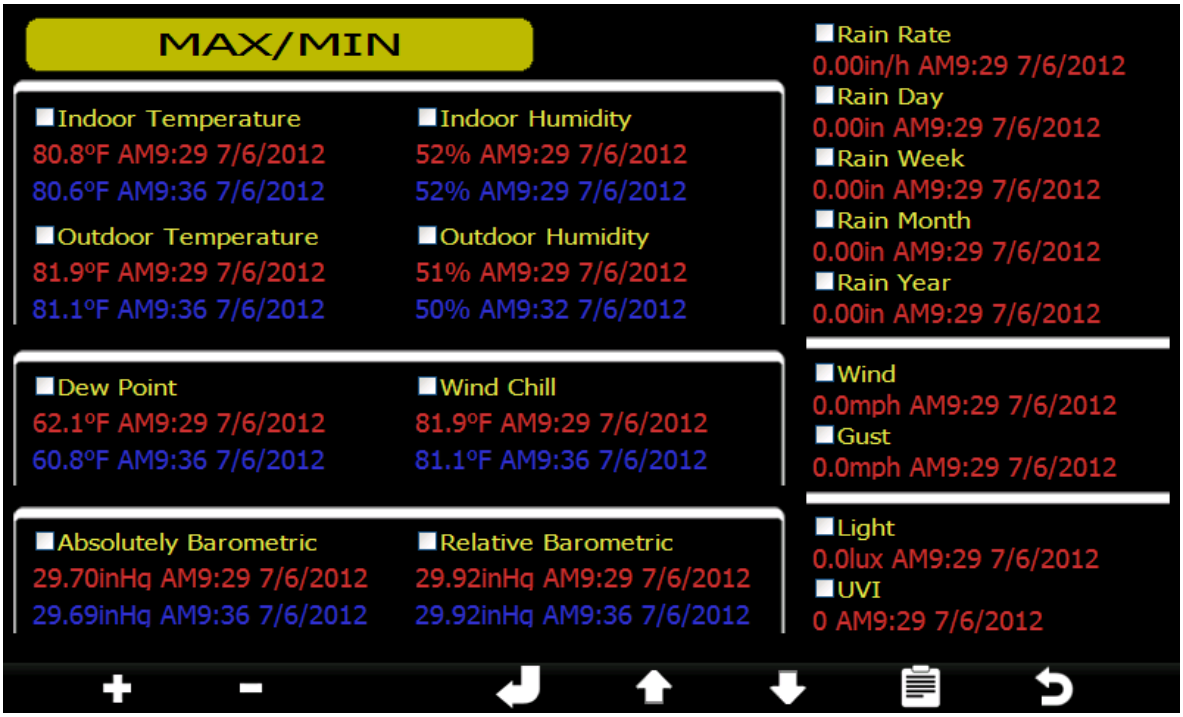
1. Weather Forecast
2. Wind direction
3. Wind speed
2. Gust
3. Wind chill
6. Indoor Temperature &Humidity
7. Outdoor Temperature &Humidity
8. Dew point
9. Rainfall
10. Date & Time
11. Barometric Pressure
12. Light
13. UV index

Icon	Description
	brightness control key press this key to enhance the brightness
	brightness control key press this key to decrease the brightness
	backlight control key press this key to on/off the backlight
	Pressure display key Press this key to choose the display between Absolute pressure and Relative pressure.
	Rain key Press this key to Shift the display between Rain Rate, Rain Day, Rain Week, Rain Month, and Rain Year.
	History key Press this key to enter History Mode
	Setting key Press this key to enter Setting Mode

2. History Mode

While in normal display, press the  key to enter History Mode. You can select the below sub-mode by pressing the  key.

2.1 MAX/MIN Mode



Icon	Description
	**Selection key** Press this key to select the weather MAX/MIN record which need to clear
	**Selection key** Press this key to select the weather MAX/MIN record which need to clear
	**Enter key** While select the weather MAX/MIN record, press this key to popup Message Box"Are you sure to clear the Max/Min?" press the key or  key to confirm the selection.
	**Up arrow key** Press this key to change the activated option field
	**Down arrow key** Press this key to change the activated option field
	**History key** Press this key to select the History sub-Mode
	**Return key** Press this key to return to normal display mode

2.2 History Record Mode

No.	Time	Indoor Temperature (°F)	Indoor Humidity (%)	Outdoor Temperature (°F)	Outdoor Humidity (%)	Wind (mph)	Gust (mph)	Dew Point (°F)	Wind Chill (°F)	Wind Dire (°)
1	AM9:49 7/6/2012	80.2	51	80.8	49	0.0	0.0	59.9	80.8	352
2	AM9:50 7/6/2012	80.2	51	80.8	49	0.0	0.0	59.9	80.8	352
3	AM9:51 7/6/2012	80.2	51	80.6	49	0.0	0.0	59.7	80.6	352
4	AM9:52 7/6/2012	80.1	51	80.6	49	0.0	0.0	59.7	80.6	352
5	AM9:53 7/6/2012	80.1	51	80.6	49	0.0	0.0	59.7	80.6	352

Icon	Description
	**Select file key** Press this key to enter the file selection mode
	**Select Page key** Press this key to enter the page selection mode.
	**Scroll left key** Press this key to view the left of the scrollable area.
	**Scroll right key** Press this key to view the right of the scrollable area.
	**Page up key** Press this key to scroll up the page you are viewing
	**Page down key** Press this key to scroll down the page you are viewing
	**History key** Press this key to select the sub-Mode
	**Return key** Press this key to return to previous mode

While in History Record Mode, press  key to enter the file selection mode:

Press ◄ or ► key to select the history year file. Press ✕ key to delete the year record. Press ↵ key to exit and open the file selected. Press ↩ key to return to History record Mode.

While in History Record Mode, press the  key to enter the page selection mode:

No.	Time	Indoor Temperature (°F)	Indoor Humidity (%)	Outdoor Temperature (°F)	Outdoor Humidity (%)	Wind (mph)	Gust (mph)	Dew Point (°F)	Wind Chill (°F)	Wind Dire (°)
625	PM6:54 7/3/2012	79.2	78	79.9	74	0.0	0.0	70.9	79.9	352
626	PM6:55 7/3/2012	79.2	78	79.9	74	0.0	0.0	70.9	79.9	352
627	PM6:56 7/3/2012	79.2	78	79.9	74	0.0	0.0	70.9	79.9	352
628	PM6:57 7/3/2012	79.2	78	79.9	73	0.0	0.0	70.5	79.9	352
629	PM6:58 7/3/2012	79.2	77	80.1	73	0.0	0.0	70.7	80.1	352
630	PM6:59 7/3/2012	79.3					0.0	70.7	80.1	352
631	PM7:00 7/3/2012	79.3					0.0	70.3	80.1	352
632	PM7:01 7/3/2012	79.5					0.0	70.5	80.2	352
633	PM7:02 7/3/2012	79.5					0.0	70.5	80.2	352
634	PM7:03 7/3/2012	79.5					0.0	70.5	80.2	352
635	PM7:04 7/3/2012	79.7	76	80.4	72	0.0	0.0	70.7	80.4	352
636	PM7:05 7/3/2012	79.7	75	80.4	72	0.0	0.0	70.7	80.4	352
637	PM7:06 7/3/2012	79.7	75	80.4	71	0.0	0.0	70.2	80.4	352
638	PM7:07 7/3/2012	79.7	75	80.4	71	0.0	0.0	70.2	80.4	352
639	PM7:08 7/3/2012	79.9	75	78.8	71	0.0	0.0	68.7	78.8	352
640	PM7:09 7/3/2012	79.9	75	80.6	70	0.0	0.0	70.0	80.6	352

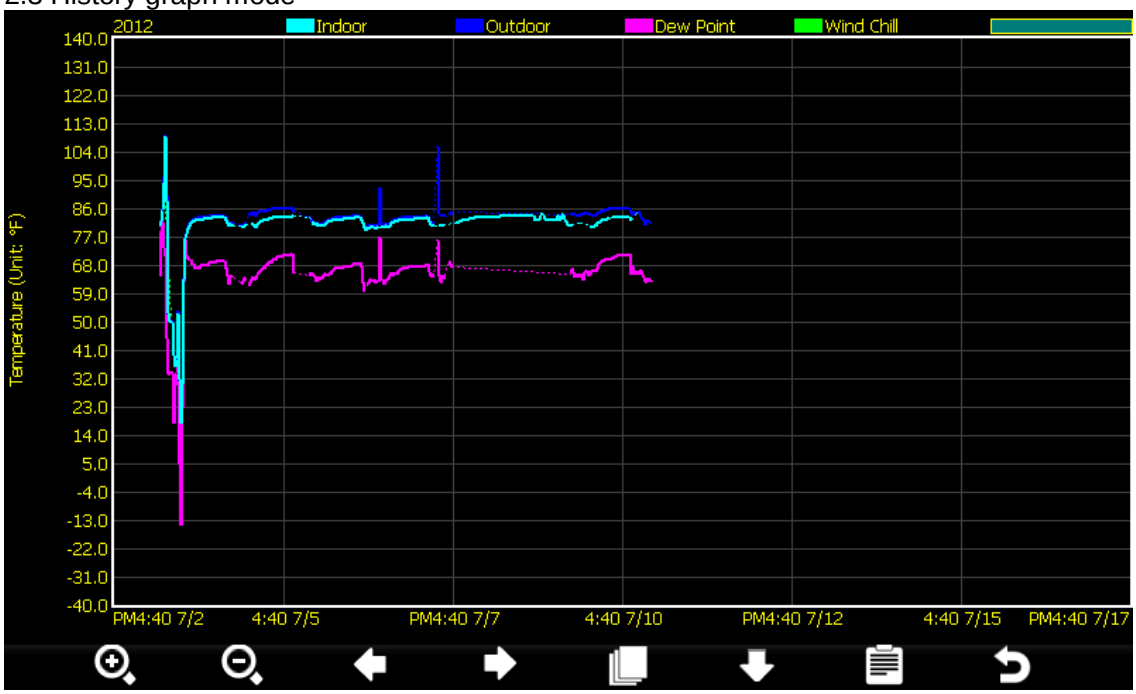
The range is 1 to 640
0040
Ok Cancel

Press ◄ or ► to select a digit in a number, press + key or − key to change the number. Press ▲ or ▼ to change the activated option field and press + key or − key to confirm.

In the history record, Wind Direction indicator matches with the number as following table:

wind direction															
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
N	NNE	NE	NEE	E	EES	ES	ESS	S	SSW	SW	SWW	W	WWN	WN	WNN

2.3 History graph mode

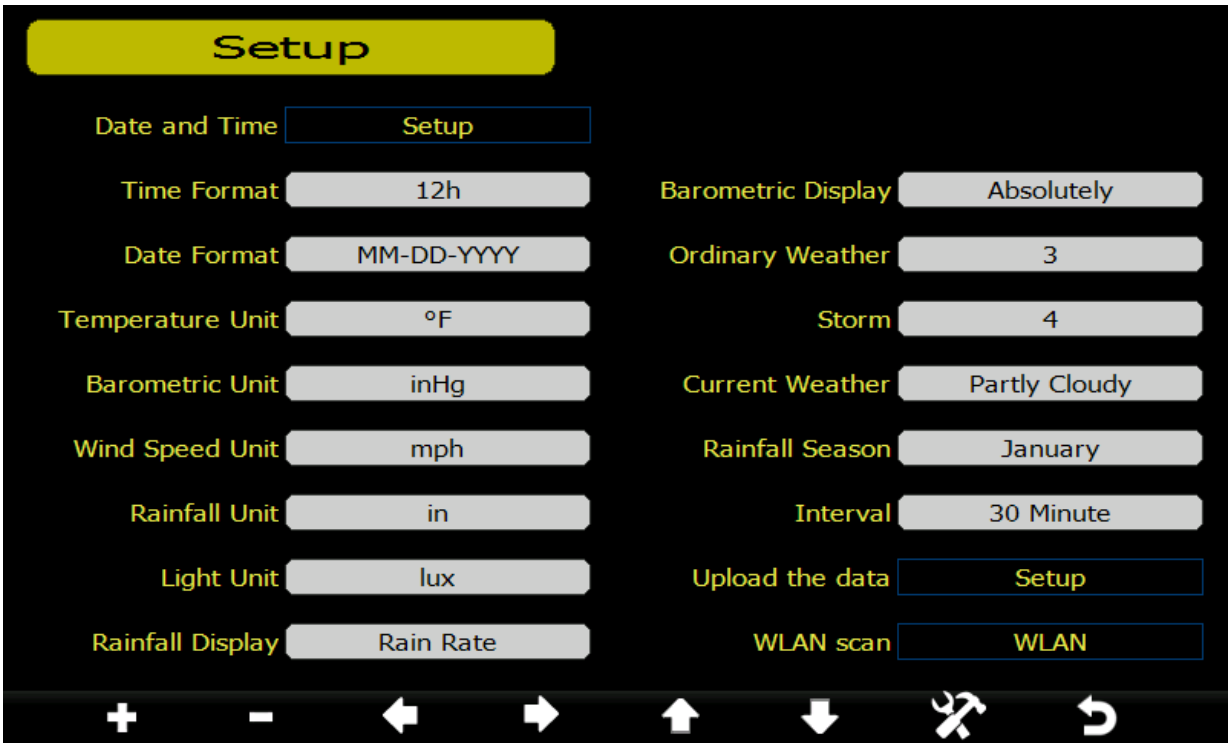


Icon	Description
	Zoom In key
	Zoom Out key
	Scroll left key Press this key to view the left of the scrollable area.
	Scroll right key Press this key to view the right of the scrollable area.
	Select file key Press this key to enter the file selection mode
	Page down key Press this key to scroll down the page you are viewing
	History key Press this key to select the sub-Mode
	Return key Press this key to return to previous mode

3. Setting Mode

While in normal display, press the key to enter Setting Mode. You can select the below sub-mode by pressing the key

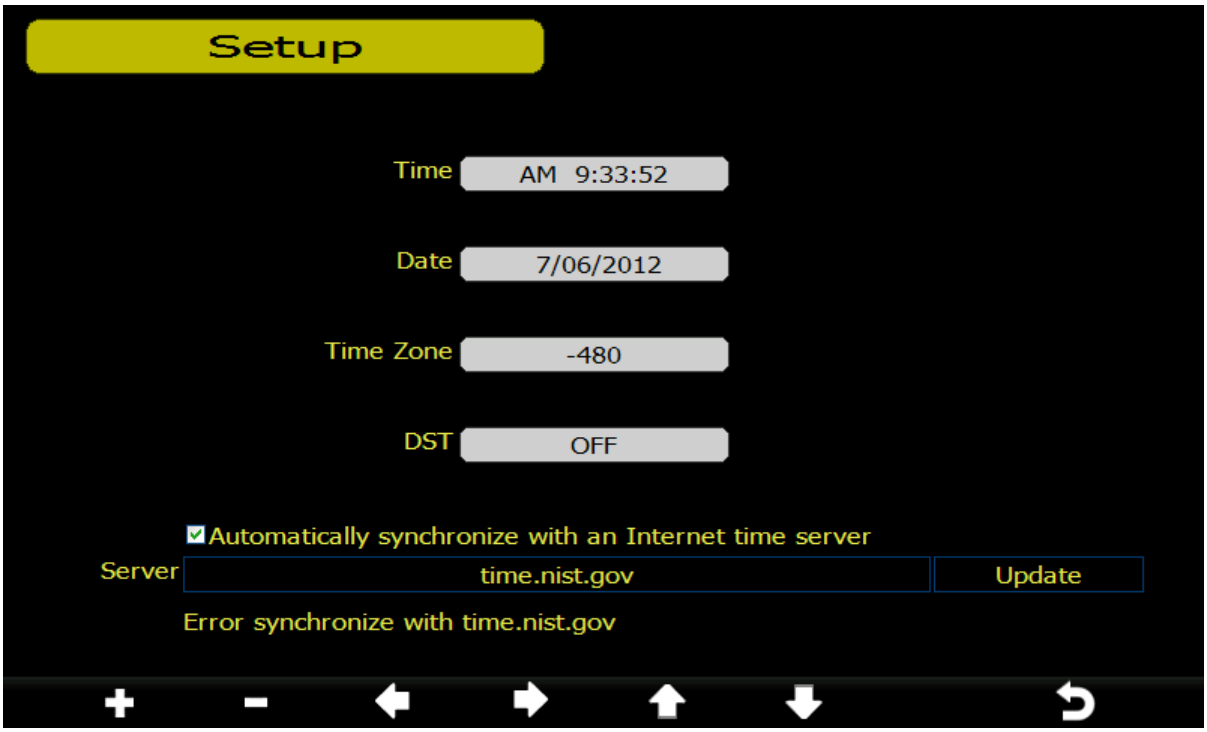
3.1 Menu Setting Mode



Icon	Description
	**Select key** Press this key to select the unit or scrolls the value
	**Select key** Press this key to select the unit or scrolls the value.
	**Left key** Press this key to select the set value.
	**Right key** Press this key to select the set value.
	**Up arrow key** Press this key to change the activated option field
	**Down arrow key** Press this key to change the activated option field
	**Set key** Press this key to select the Setting sub-Mode
	**Return key** Press this key to return to previous mode

3.1.1. Date and Time setting

While in Menu Setting Mode, press  key to select Date and Time Setup field, press  or  key to enter Date and Time Setup mode:



1) Time setting (hour/minute/second)

Press ↓ key to select time setting field, the hour digit turn red, press the + or − key to change the hour setting. Press → to set the minute, the minute digit turn red, press the + or − key to change the minute setting. Press → to set the second, the second digit turn red, press the + or − key to change the second setting

2) Date setting

Press ↓ key to select Date setting field, the day digit turn red, press the + or − key to change the day setting. Press → to set the month, the month digit turn red, press the + or − key to change the month setting. Press → to set the year, the year digit turn red, press the + or − key to change the year setting

3) Time zone setting（-720~720 Minute）

Press ↓ key to select Time zone setting field, press the + or − key to change the time zone setting. Press ← or → to select a digit in a number

4) DST setting（ON/OFF）

Press the + or − key to shift ON or OFF.

5) Automatically synchronize with an internet time server

Press the + or − key to select

6) Internet time server

The default server is time.nist.gov. Press + to popup the keyboard for you to type in the new server

3.1.2 Time Format setting (12/24h, default 24 h)
3.1.3 Date Format setting (MM-DD-YY, DD-MM –YY or YY- MM-DD format, default DD-MM-YYYY)
3.1.4 Temperature unit setting (℃ / ℉,default ℃)
3.1.5 Barometric unit (hPa/ inHg/mmhg, default hPa)
3.1.6 Wind speed unit (km/h, m/s, bft, mph, knots default: m/s)
3.1.7 Rainfall unit (mm, inch, default: mm)
3.1.8 Light unit (lux,fc,w/㎡)

3.1.9 Rainfall display（Rain Rate, Rain Day, Rain Week, Rain Month, Rain Year）

3.1.10 Barometric display（Absolutely, Relative）

3.1.11 Ordinary weather (2-4, default 3)

It's pressure sensitivity setting for weather forecasting. For areas that experience frequent changes in air pressure requires a higher level setting compared to an area where the air pressure is stagnant. For example if 4 is selected, then there must be a fall or rise in air pressure of at least 4hPa needed to change the weather forecast icons.

3.1.12 Storm (3-9, default 4)

It's storm threshold setting. Similar to the general pressure sensitivity setting it is possible to adjust the storm threshold sensitivity form 3-9 (default 4). When there is a fall over pressure threshold within 3 hours, the storm forecasting will be activated, the clouds with rain icon and tendency arrows will flash for 3 hours indicating the storm warning feature has been activated.

3.1.13 Current weather

The five weather icons are Sunny, Partly Cloudy, Cloudy, Rainy and Storm.

Sunny Partly Cloudy Cloudy Rainy Storm

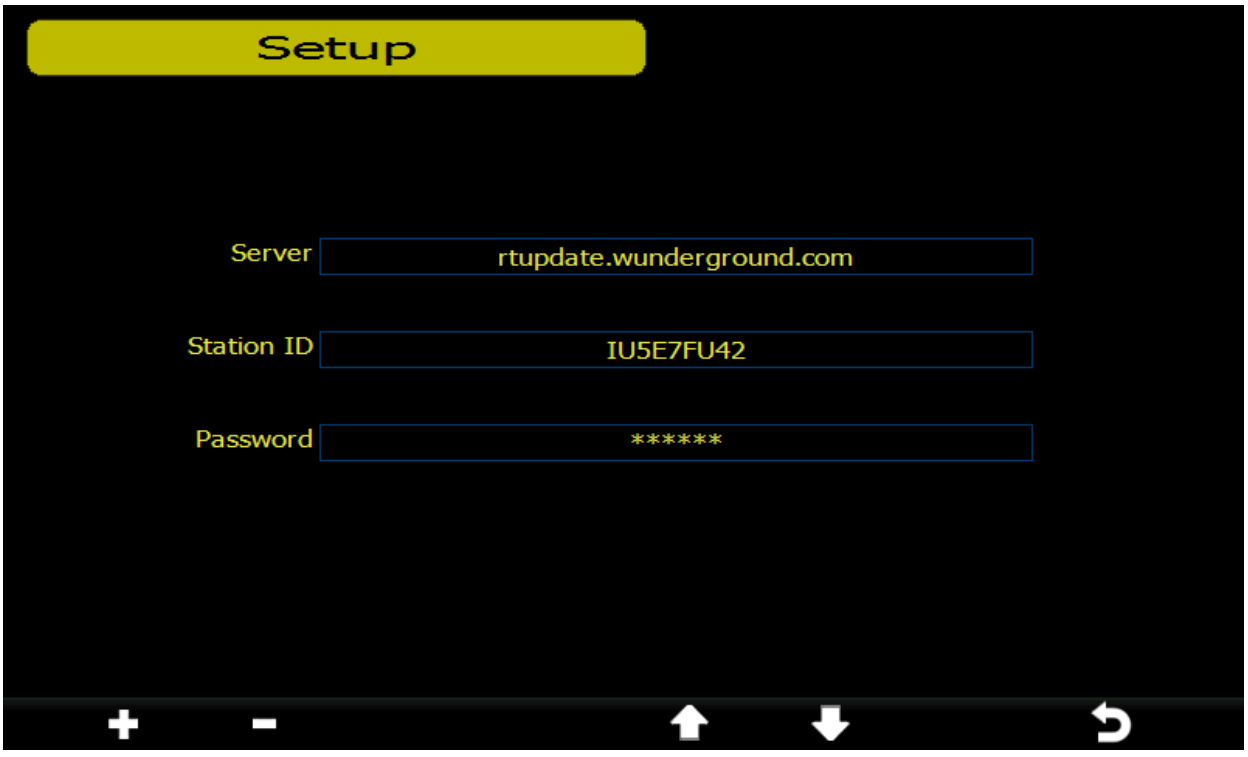
3.1.14 Rainfall season (default: January)

Rainfall season influence the annual rainfall maximum, minimum and total value. When one month was selected, the annual rainfall and annual max/min rainfall were zero clearing at 0:00 of the first day of the selected month,

3.1.15 Storing Interval (1-240minutes)

3.1.16 Upload the data

Press + or − key to enter upload data mode, type in the Station ID and password to upload the data.



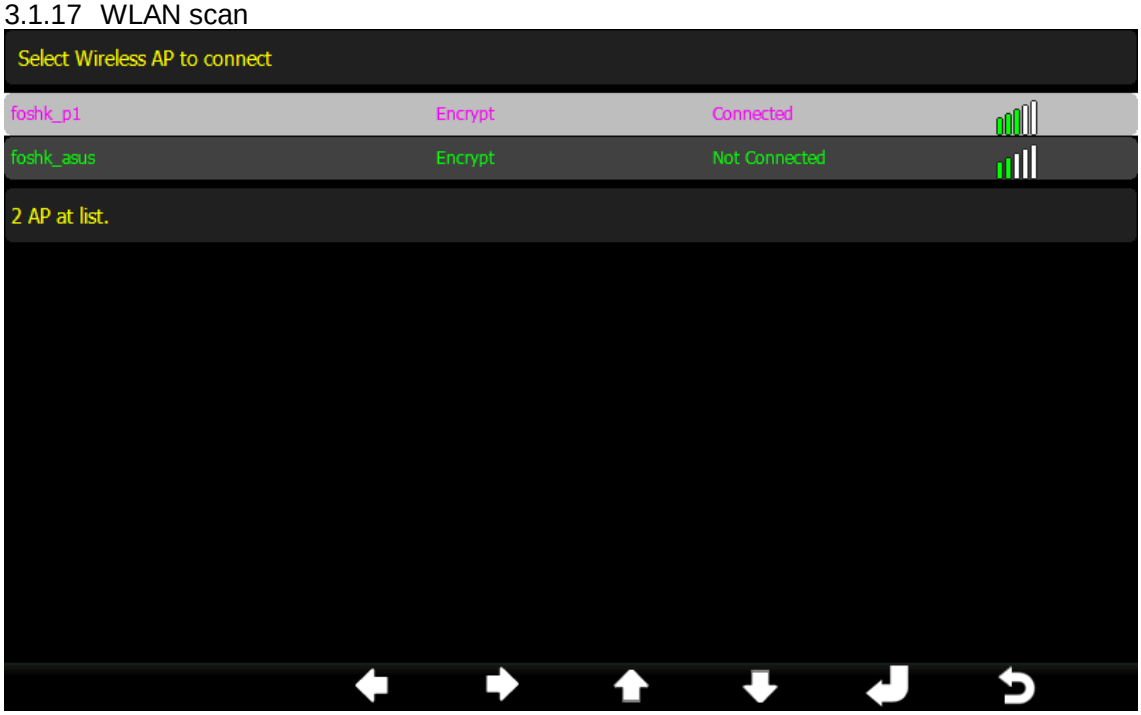
How to get the Station ID and password

Log into the weather website: www.wunderground.com →Click the weather station under local weather category, you will find the PWS(Personal Weather Station) information. → Click " register my personal weather station" →After finishing signup you will get one Station ID

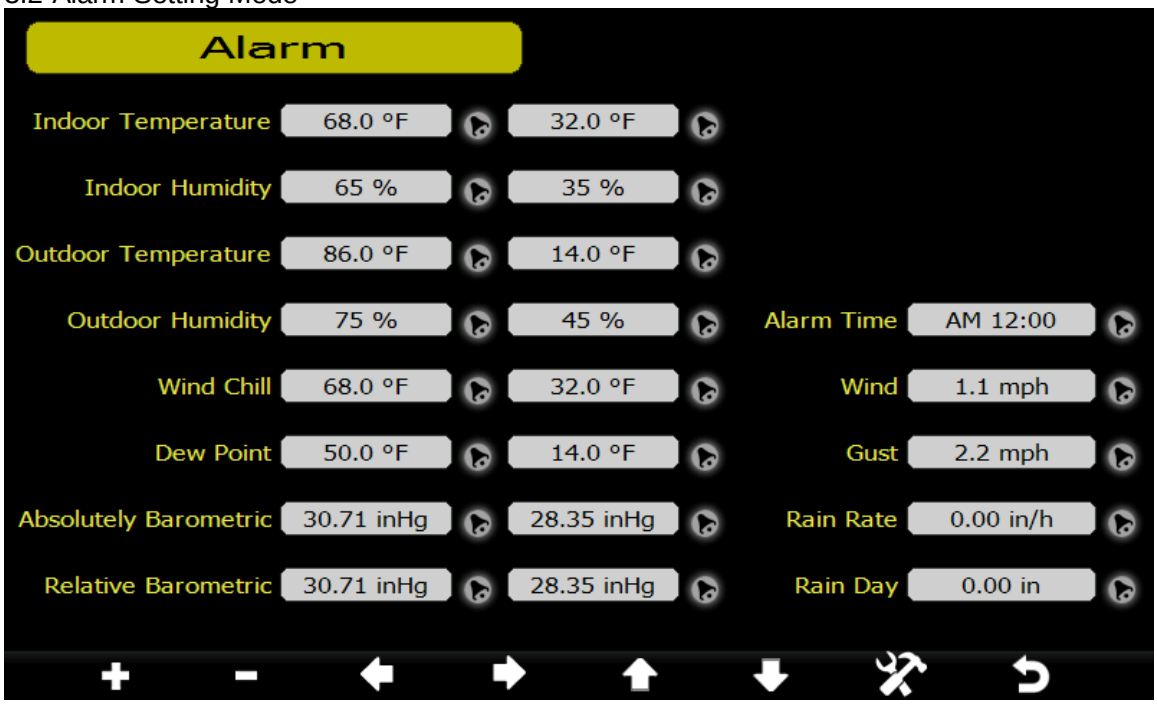
Once you have a Station ID and password you need to type them into your weather station. The password for each of your stations is the password you use to log in to Wunderground site.

Please Note: **Make sure you enter the ID in all capitals, and the password exactly as you chose it, both fields are case sensitive.**

3.1.17 WLAN scan



3.2 Alarm Setting Mode

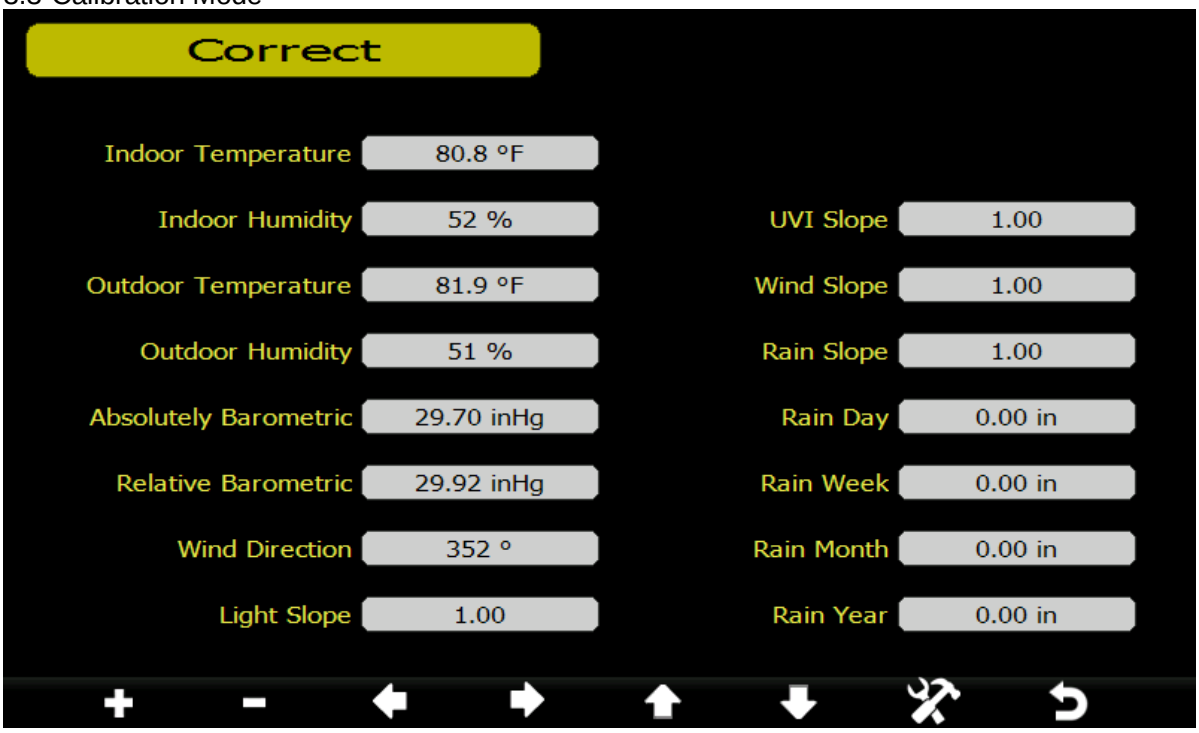


Icon	Description
	Select key Press this key to select the unit or scrolls the value
	Select key Press this key to select the unit or scrolls the value.
	Left key Press this key to select the set value.
	Right key Press this key to select the set value.
	Up arrow key Press this key to change the activated option field
	Down arrow key Press this key to change the activated option field
	Set key Press this key to select the Setting sub-Mode
	Return key Press this key to return to previous mode

The first row is high alarm value and the second row is low alarm value.

When a set weather alarm condition has been triggered, that particular alarm will sound for 120 second and the corresponding icon will flash until the weather condition doesn't meet the user set level. Press any key to mute the alarm.

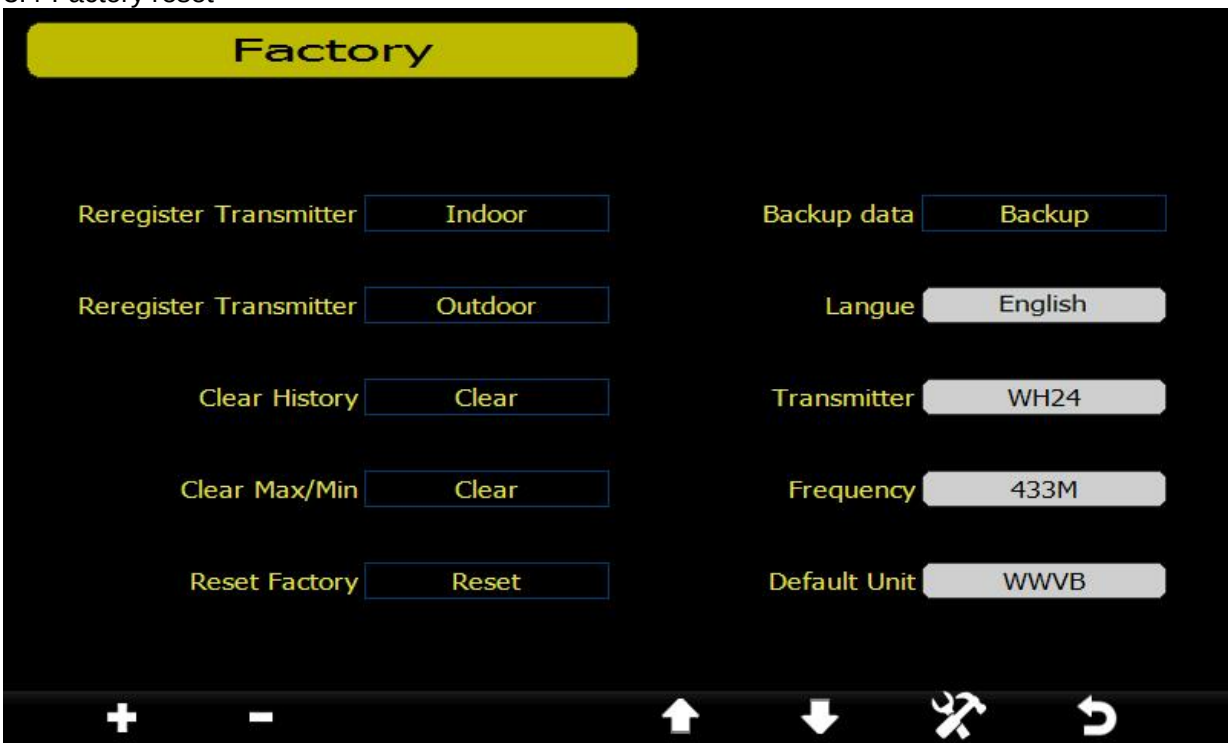
3.3 Calibration Mode



Icon	Description
	Select key Press this key to select the unit or scrolls the value
	Select key Press this key to select the unit or scrolls the value.
	Left key Press this key to select the set value.

	Right key Press this key to select the set value.
	Up arrow key Press this key to change the activated option field
	Down arrow key Press this key to change the activated option field
	Set key Press this key to select the Setting sub-Mode
	Return key Press this key to return to previous mode

3.4 Factory reset

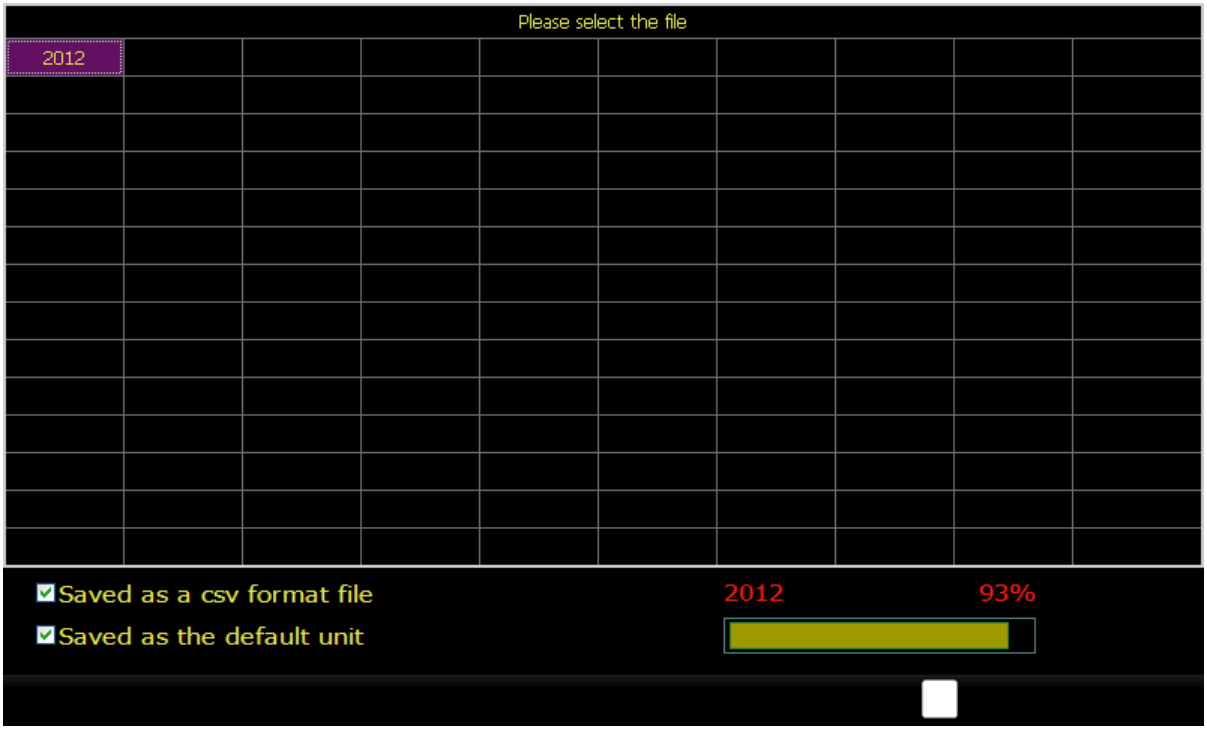


3.4.1 Reregister indoor transmitter(ON/OFF)
3.4.2 Reregister outdoor transmitter(ON/OFF)
3.4.3 Clear History
3.4.4 Clear Max/Min
3.4.5 Reset Factory
3.4.6 Backup data

Press key to select Backup data field, press the or key to enter backup mode:

Press ◄ or ► key to select the history year file. Press + key or − key to confirm the selection. Press ▲ or ▼ to change the activated option field. Press ▶ key to start backup, press ▶ key again to stop the backup. Please insert TF card before start backup. The data save as excel format as default setting.

If didn't choose "Saved as csv format file", the file will be saved as binary format.
"Saved as the default unit" should be chosen on the base of "Saved as csv format file" have been chosen.



3.4.7 Language (English, Chinese, Danish, Dutch, French, German, Italian, Spanish)
3.4.8 Transmitter
3.4.9 Frequncy
3.4.10 Default unit (WWVB, DCF)
WWVB means US unit.

DCF means Metric unit.

Specifications

Outdoor data

Transmission distance in open field	:	100m(330 feet)
Frequency	:	433 MHz
Temperature range	:	-40˚C--60˚C (-40℉ to +140℉)
Accuracy	:	+ / - 1 °C
Resolution	:	0.1˚C
Measuring range rel. humidity	:	1%～99%
Accuracy	:	+/- 5%
Rain volume display	:	0 – 9999mm (show --- if outside range)
Accuracy	:	+ / - 10%
Resolution	:	0.3mm (if rain volume < 1000mm) 1mm (if rain volume > 1000mm)
Wind speed	:	0-50m/s (0~100mph) (show --- if outside range)
Accuracy:		+/- 1m/s (wind speed< 5m/s) +/-10% (wind speed > 5m/s)
Light	:	0-300k Lux
Accuracy	:	+/-15%
Measuring interval outdoor sensor:		16 sec
Measuring interval indoor sensor	:	64 sec

Indoor data

Indoor temperature range	:	-40˚C--60˚C (-40°F to + 140°F) (show --- if outside range)
Resolution	:	0.1˚C
Measuring range rel. humidity	:	1%～99%
Resolution	:	1%
Measuring range air pressure	:	300-1100hPa (8.85-32.5inHg)
Accuracy	:	+/-3hpa under 700-1100hPa
Resolution	:	0.1hPa (0.01inHg)
Alarm duration	:	120 sec

Power consumption

Base station	:	5V DC adaptor (included)
Indoor sensor	:	2xAAA alkaline batteries (not included)
Remote sensor	:	2xAA alkaline rechargeable batteries (included)

Remark: Be sure to use 1.5V rechargeable battery for solar transmitter.

Where outdoor temperature is lower than -20˚C, make sure proper type of batteries to be used to assure that the device can get enough power to maintain its function properly. Normal alkaline batteries is not allow to be used since when outdoor temperature is lower than -20 ˚C, the battery's discharging capability is greatly reduced.

Please help in the preservation of the environment and return used batteries to an authorized depot.