WS3085 PROFESSIONAL WIRELESS WEATHER STATION WITH USB UPLOAD, UV INDEX & LIGHT METER

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Operation Manual

About This Manual

Thank you and congratulations on selecting this professional weather station.   We are positive you will enjoy the benefits of accurate weather readings and information that our weather stations offer.   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.

Important!

Warranty and Support

We warrant our products to be free of defects in components and workmanship, under normal use and service, for one year from the date of original purchase. For product support and warranty claims please contact the following:

- **Purchased in UK/EU:**   As many issues can be a result of incorrect setup please contact our local distributor Greenfrog Scientific greenfrogscientific.co.uk and their team will be happy to help. Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

- **Purchased in AUSTRALIA:**   As many issues can be a result of incorrect setup please contact our local distributor Monax Test & Weather monaxtestandweather.com.au and their team will be happy to help.   Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

- **Purchased in NEW ZEALAND:**   As many issues can be a result of incorrect setup please contact our local distributor Scientific Sales scientificsales.co.nz and their team will be happy to help. Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

For all others please contact the seller who sold you this item.

Getting Started

The WS3085 Professional Wireless Weather Station includes a base station (receiver), a transmitter unit which includes solar panel and light sensors, one wind direction sensor, one wind speed sensor, one rain gauge, one USB cable and downloadable software.
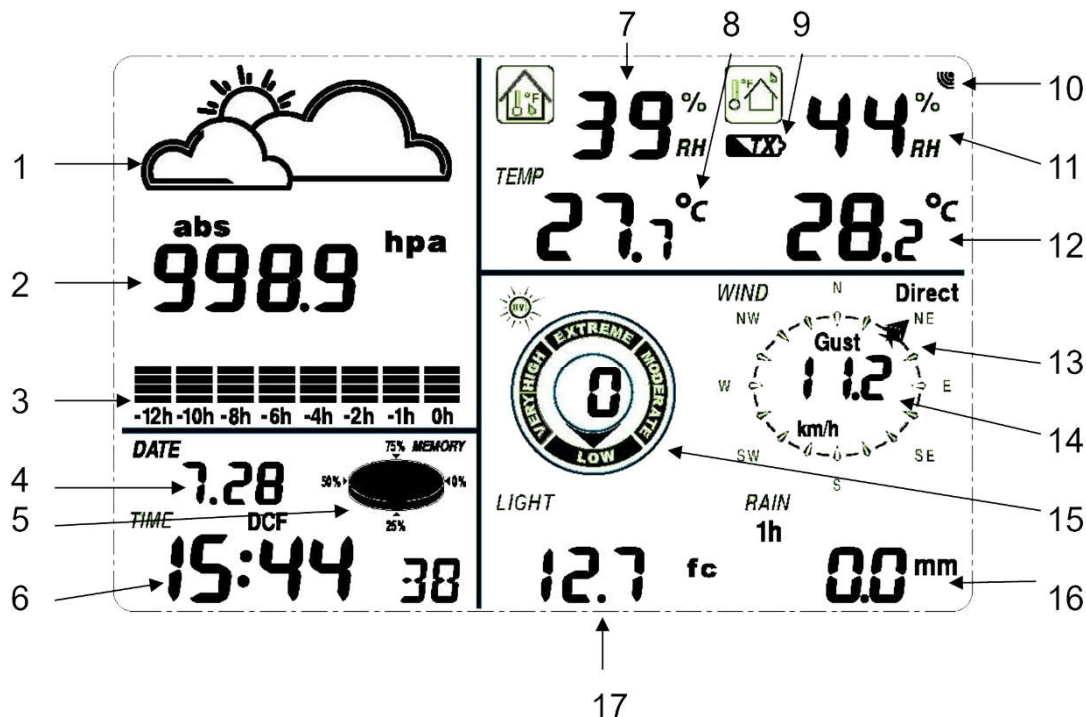
1. Weather Forecast
2. Barometric Pressure
3. Barometric Trend
4. Date
5. Memory
6. Time
7. Indoor Humidity
8. Indoor Temperature
9. Transmitter Low Battery Icon
10. Outdoor Reception Icon
11. Outdoor Humidity
12. Outdoor Temperature
13. Wind Direction
14. Wind Speed
15. UV Index
16. Rainfall
17. Light

Note: The presence of the "Alarm-On" icon 🔔 means that the particular alarm has been enabled.

Important Notes

System Start

Insert two LR6 (AA) size batteries into the transmitter first and replace the battery cover.   The LED located on one side of the battery compartment, towards the wind sensors at the front of the sensor array will illuminate for 4 seconds, then go off and begin to flash intermittently (approximately every 48 seconds).   If the LED does not light up or stays on permanently make sure the batteries are inserted the correct way.

Insert three LR6 (AA size) batteries into the Base Station/Console.   The console will illuminate for a few seconds with all the display segments illuminated for checking.   After this the Base Station will make an initial measurement and start to register the transmitter (the Outdoor Reception Signal icon will be turned on). Do not touch the Base Station before the outdoor data is received or the outdoor sensor learning mode will be terminated. When the outdoor transmitter has been registered the Base Station will automatically switch to the normal display mode from which all further settings can be adjusted by the user.

Positioning

Once you have verified that all of the components of the weather station are working they can be positioned in their permanent places. Before permanently mounting make sure that all the components work properly together at their chosen mounting or standing locations. If there appear to be problems with the 433 MHz radio transmission, they can mostly be overcome by adjusting the mounting locations.

Note: The radio communication between the receiver and transmitter in an open field can reach a distance of up to 100m providing that there are no interfering obstacles such as buildings, trees, vehicles, high-voltage lines, etc. Sources of radio interference such as PC screens, radios or TV sets, can in extreme cases entirely cut off radio communication. Please take this into consideration when choosing standing or mounting locations.

Reconnecting Lost Signal

If no outdoor weather data is displayed as a result of loss of signal during set up, mounting, changing of batteries in the transmitter or plugging or unplugging cables, simply press and hold the **DOWN** key for 4 seconds then release.   After this the Base Station will make an initial measurement and start to register the transmitter (the radio reception icon will be turned on). Do not touch the Base Station before the outdoor data is received (this may take several minutes) or the outdoor sensor learning mode will be terminated. When the outdoor transmitter has been registered the Base Station will automatically switch to the normal display mode from which all further settings can be adjusted by the user.

Note: When replacing batteries in the transmitter wait two minutes before re-inserting for a full reset.

Wind Direction

On the edge of the wind direction sensor, there are four letters - "N", "E", "S" and "W" representing the directions North, East, South and West. The wind direction sensor has to be adjusted so that the directions on the sensor are matching your real location. A permanent wind direction error will be introduced when the wind direction sensor is not positioned correctly during installation.

Batteries

Good quality non-rechargeable Alkaline or Lithium batteries are recommended and will receive an appropriate trickle charge from the solar panel.

Note: Many rechargeable batteries are 1.2V and as such are not suitable for this unit which requires 1.5V batteries.   Rechargeable batteries also often leak their peak charge quickly which can cause reduced transmission range.   As such we recommend avoiding the use of rechargeable batteries. Lithium batteries are recommended for cold climates and for optimal performance.

Note: Incorrectly inserting the batteries may cause a fault and invalidate the warranty so take care to insert them with the correct polarity

Low Battery Indicator

In some circumstances, the transmitter low battery indicator ▼*TX* may illuminate when temperatures are outside the range of 10-35°C. This does not necessarily indicate low batteries and will switch off once the temperature returns to this range (also see note above on the use of Alkaline batteries).
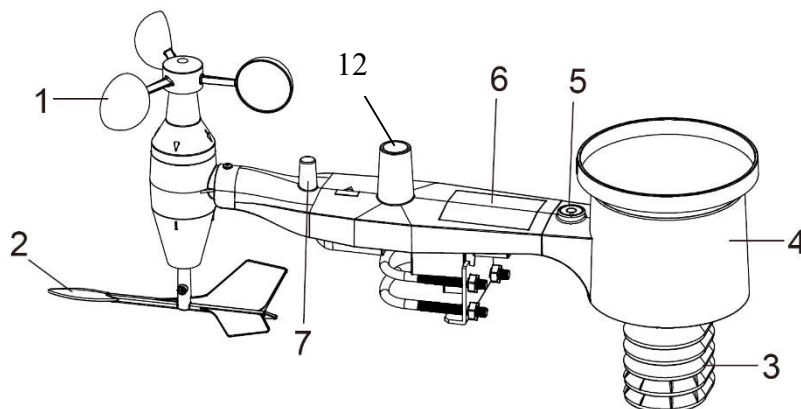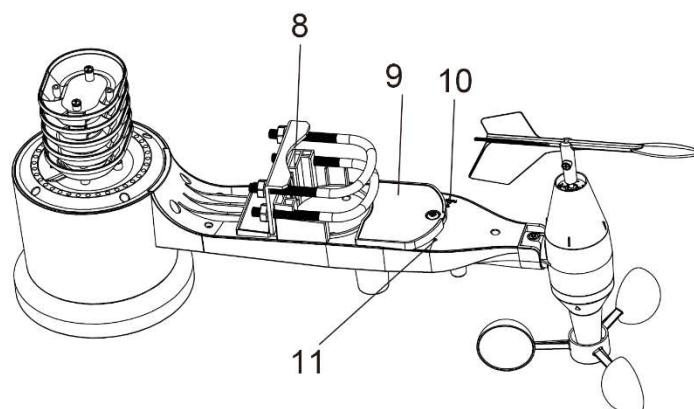
Setup - Sensors

Figure 1

Figure 2

1. Wind Speed Sensor/Anemometer
2. Wind Vane
3. Thermo-hygro sensor
4. Rain collector
5. Bubble level
6. Solar panel
7. Antenna
8. U-Bolt
9. Battery compartment
10. Reset button
11. LED Indicator: light on for 4s if the unit power up. The LED will flash once every 48 seconds.
12. UV/Light sensor

1. Install U-bolts and metal plate

Installation of the U-bolts, which are in turn used to mount the sensor package on a pole, requires installation of an included metal plate to receive the U-bolt ends. The metal plate, visible in Figure 3,

has four holes through which the ends of the two U-bolts will fit. The plate itself is inserted in a groove on the bottom of the unit (opposite the solar panel). Note that one side of the plate has a straight edge (which goes into the groove), the other side is bent at a 90-degree angle and has a curved profile (which will end up "hugging" the mounting pole). Once the metal plate is inserted, insert both U-bolts through the respective holes of the metal plate as shown in Figure 3.
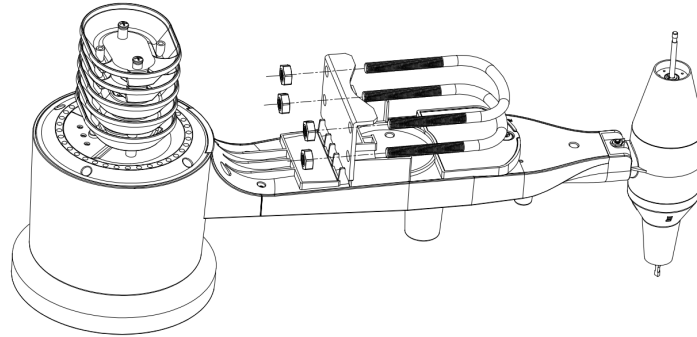

Figure 3: U-Bolt installation

Loosely screw on the nuts on the ends of the U-bolts. You will tighten these later during final mounting. Final assembly is shown in Figure 4.
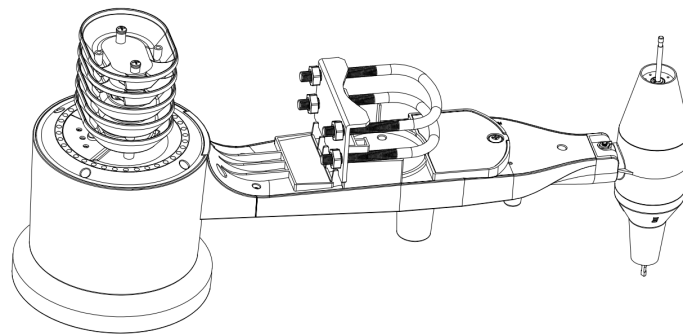

Figure 4: U-Bolts and nuts installed

The plate and U-bolts are not yet needed at this stage but doing this now may help avoid damaging wind vane and wind speed cups later on. Handling of the sensor package with wind vane and anemometer installed to install these bolts is more difficult and more likely to lead to damage.

2. Install anemometer

Push the anemometer assembly onto the shaft on the top side of the sensor package, as shown in Figure 5 (left). Tighten the set screw, with a Philips screwdriver (size PH0), as shown on the right. Make sure the cup assembly can rotate freely. There should be no noticeable friction when it is turning.
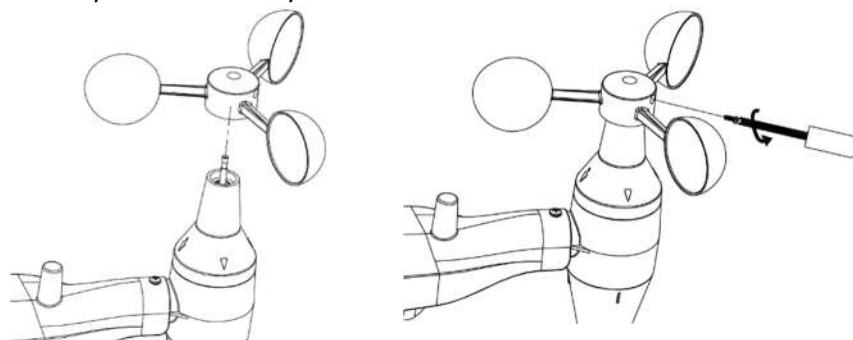

Figure 5: Anemometer installation

3. Install wind vane

Push the wind vane onto the shaft on the opposite side of the wind cups, until it goes no further, as shown on the left side in Figure 6. Next, tighten the set screw, with a Philips screwdriver (size PH0), as shown on the right side, until the wind vane cannot be removed from the axle. Make sure the wind vane can rotate freely. The wind vane's movement has a small amount of friction, which is helpful in providing steady wind direction measurements
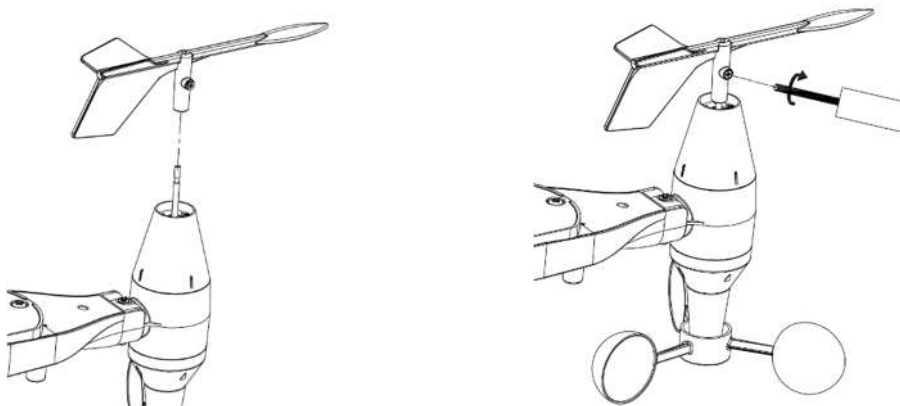

Figure 6: Wind vane installation

4. Install Batteries

Insert 2xAA batteries into the battery compartment and tighten the screw of battery cover. The LED indicator on the back of the transmitter will turn on for 4 seconds and flash once every 48 seconds.
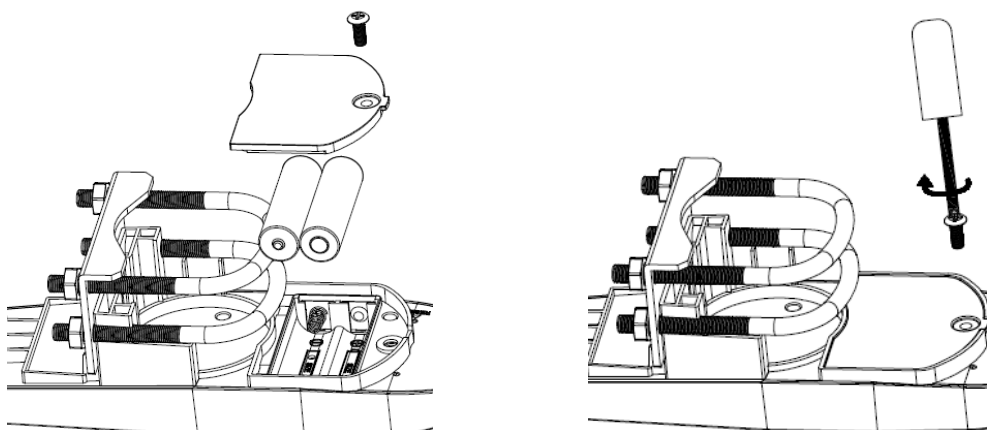

Figure 7: Battery installation diagram

**Note****:**   If no LED lights up or is illuminated permanently, make sure the battery is inserted the correct way and that a proper reset has been performed. Do not install the batteries backwards. You can permanently damage the outdoor sensor

**Note**: We recommend lithium batteries for cold weather climates, but alkaline batteries are sufficient for most climates. We do not recommend rechargeable batteries. They have lower voltages, do not operate well at wide temperature ranges and do not last as long, resulting in poorer reception.

RF (Radio Frequency) Receiving Mode
1. After power-on, the weather station enters RF receiving state for 144 seconds.

2. The Console receives the temperature, humidity, wind speed and rain data every 48s, receiving light data every 60s. If there is no new signal received from the sensor for eight consecutive periods, the outdoor temperature and humidity will display "----". The base station will then start searching for a new remote sensor signal for 144s.

3. If the outdoor data has been lost or batteries have been changed in the transmitter, press the reset button on the solar power device to re-send the signal and hold the "▼" key for 4s to enter manual RF learning mode.

4. Do not press any key before outdoor sensor data received, otherwise the outdoor sensor learning mode will be terminated. When the outdoor transmitter has been registered, the base station will automatically switch to the normal display mode from which all further settings can be performed by the user.

5. If there is no temperature reading in the indoor station, make sure the units are within range of each other or repeat the battery installation procedure.

Note: Normally, radio communication between receiver and transmitter in the open can reach a distance of upto 100 metres provided that there are no interfering obstacles such as buildings, trees, vehicles, high voltage lines, etc.

Radio interference from PC screens, radios or TV sets can, in extreme cases, entirely cut off radio communication. Please take this into consideration when choosing standing or mounting locations.

5.   Mount outdoor sensor

Before you mount

Before proceeding with the outdoor mounting detailed in this section, you need to make sure the base station can receive the data from outdoor sensor, while you keep the assembled outdoor sensor package nearby (although preferably not closer than 1.5m from the console). This will make any troubleshooting and adjustments easier and avoids any distance or interference related issues at setup.

After setup is complete and everything is working, return here for outdoor mounting. If issues show up after outdoor mounting they are almost certainly related to distance, obstacles etc.

Reference Figure 8, the mounting assembly includes two U-Bolts and a bracket that tightens around a 2.5cm to 5cm diameter pole (not included) using the four U-Bolt nuts.
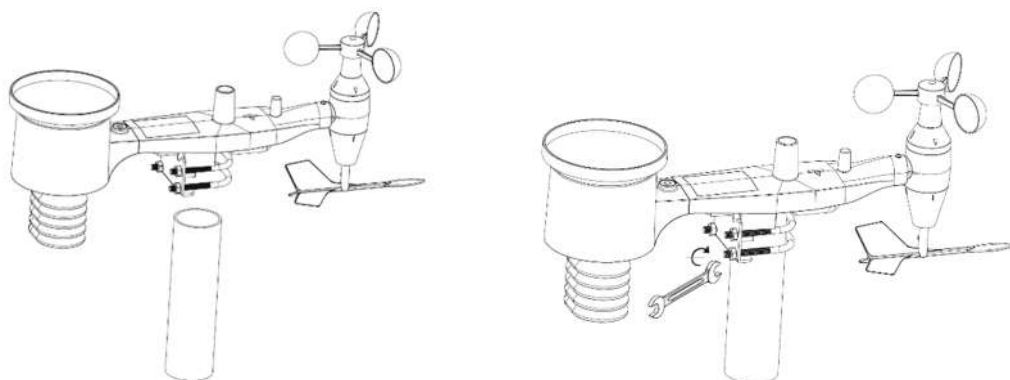

Figure 8: Sensor package mounting diagram

Note: Beside the antenna, there is an arrow icon with "WEST" indicated (Figure 9) representing the

direction of west. The sensor body must be adjusted so that the "WEST" indication is facing to real west direction in your location. A compass device is recommended to help adjust direction. Permanent wind direction error will be introduced when the outdoor sensor is not correctly aligned.
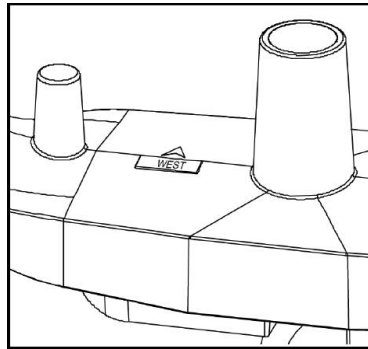

Figure 9: West indicator

Now look at the bubble level. The bubble should be fully inside the red circle. If it is not, wind direction, speed, and rain readings may not operate correctly or accurately. Adjust the mounting pipe as necessary. If the bubble is close, but not quite inside the circle, and you cannot adjust the mounting pipe, you may have to experiment with small wooden or heavy cardboard shims between the sensor package and the top of the mounting pole to achieve the desired result (this will require loosening the bolts and some experimentation).

Make sure you check, and correct if necessary, the westly orientation as the final installation step, and now tighten the bolts with a wrench.

6. Reset Button and Transmitter LED

Using a bent-open paperclip, press and hold the RESET BUTTON (see Figure 10) to affect a reset: the LED remains off while the RESET button is depressed, and will turn on for four seconds once you release the button. The LED should then resume as normal, flashing approximately once every 48 seconds.
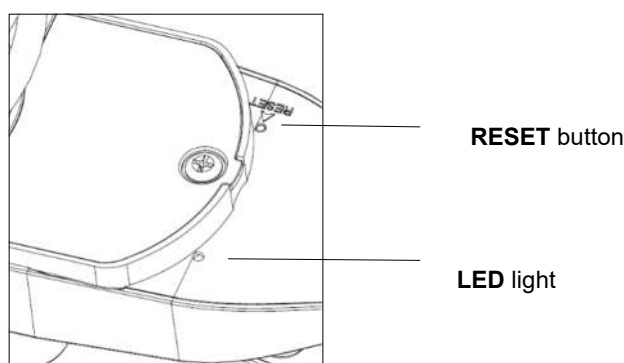
RESET button

LED light

Figure 10

7. Best Practices for Wireless Communication

<u>*Note:*</u>   To ensure proper communication, mount the remote sensor(s) upright on a vertical surface, such as a wall. **Do not lay the sensor flat.**

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 433MHz devices and communication is intermittent, try turning these other devices off for troubleshooting purposes. You may need to relocate the transmitters or receivers to avoid intermittent communication.
3. **Line of Sight Rating.** This device can reach 100 metres in line of sight (with no interference, barriers or walls) but typically you will get 30 metres 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 walls. If you have metal walls, 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%

The solar transmitter
The solar transmitter makes use of solar energy to power the instruments it is connected to. Note: Use 1.5V LR6 (AA) size batteries. For the solar transmitter to function properly, make sure the solar receptors on the transmitter are exposed to sunlight and the connectors on the connection cable are securely plugged in. For best results face the solar panel north if you reside in the southern hemisphere and south if you reside in the northern hemisphere.

Setting Up

The base station has six keys for easy operation: the **MENU** key, **UP** key, **DOWN** key, **ENTER** key, **HISTORY** key and the **ON/OFF** key.

Note: Keeping the **UP** or **DOWN** key pressed when setting certain units will increase/decrease digits in greater steps.

The setting procedure can be exited at any time by either pressing the **HISTORY** key or waiting for the 30-second time-out to take effect.

The basic settings can now be performed as follows:

Time

Press the **MENU** key to select the TIME section, the TIME section digits will start flashing and you will be in the LCD contrast setting mode (level 1-8, default level 5), press the **UP** or **DOWN** key to set the value. Level 1 will produce the faintest appearance whereas level 8 is the darkest.

Press the **ENTER** key to select the following:
- Time zone
- 12/24h time display (default 12h)
- Manual time setting (hours/minutes)

Press the **UP** or **DOWN** key to set each value.

Note: Set your time zone to be your offset against UCT-1 as follows:

Country	Time Zone setting	Country	Time Zone setting
New Zealand	+11	Atlantic time (N. America)	-4
Australia (NSW)	+9	Eastern time (N. America)	-5
Australia (WA)	+7	Central time (N. America)	-6
South Africa	+1	Mountain time (N. America)	-7
Eastern Europe	+1	Pacific time (N. America)	-8
Western/Central Europe	0	Alaska time (N. America)	-9
United Kingdom/GMT	-1	Hawaii time (N. America)	-10

Date

Press the **MENU** key twice to select the DATE section, the DATE section digits will start flashing. Press the **ENTER** key to shift the display between the following parameters and press the **UP** or **DOWN** key to change the value:

- Date Format
- Year
- Month
- Day
- Time Alarm

After editing the Time Alarm it can be enabled or disabled by pressing **ON/OFF** while the hour or minute of the Time Alarm is flashing. An alarm symbol 🔔 appears in the Time display section indicating the alarm function has been enabled.   **Note:** Press any key to mute the alarm.

Note: Alarms can also be set for most of the weather variables (see below for instructions on setting). When a set weather alarm condition has been triggered that particular alarm will sound for 120 seconds. The corresponding value, 'HI AL" or "LO AL" and the alarm symbol will flash until the weather condition no longer meets the user's set level.   When the alarm is sounding press any key to mute the alarm.

Note: Because of the preset default settings it may not be necessary for the majority of users to perform any further basic settings - except for Relative Air Pressure (see below). Changes, however, can be easily made as below.

Pressure
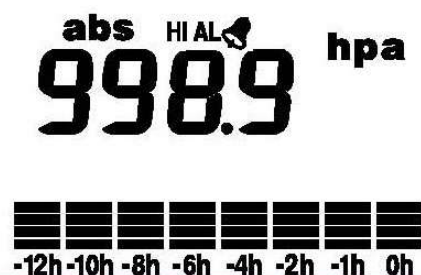
Press the **MENU** key three times to select the PRESSURE HISTORY section, the PRESSURE HISTORY section digits will start flashing. Press the **UP** or **DOWN** key to select the bar graph time scale (either 12 hrs or 24 hrs).

Press the **MENU** key a fourth time to select the PRESSURE section, the PRESSURE section digits will start flashing.   Press the **UP** or **DOWN** key to change between Relative and Absolute air pressure.
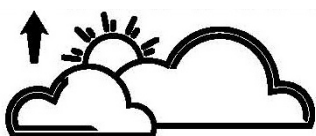
Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:

- Pressure units of measurement - hPa, mmHg or inHg (default hPa).
- Relative pressure value - if you are significantly above sea level you will need to calibrate the air pressure reading to allow for your altitude.   To do so make sure you have selected Relative as above and change the pressure reading to match with a local benchmark such as the local air pressure provided for your area on your local meteorlogical service websites. To change the value for Relative pressure, press **ENTER** a second time so that just the pressure value is flashing and

then use the up and down arrows to adjust the values.   If Absolute pressure is selected, skip this step.

- Pressure high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Pressure low alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum pressure value (since last reset).   Resetting the maximum pressure value - when both the pressure value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum pressure value will be reset to the current reading.
- Minimum pressure value (since last reset).   Resetting the minimum pressure value - when both the pressure value and MIN icon are flashing, hold the **ENTER** key for 3s, the minimum pressure value will be reset to the current reading.

Weather Forecast

Press the **MENU** key five times to select the TENDENCY section, the TENDENCY section digits will start flashing. Press the **UP** or **DOWN** key to select the tendency (not generally required as this will adjust automatically over a few days as the unit collects data and begins forecasting).

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Set the pressure threshold from 2-4hPa (default 2hPa)
- Set the storm threshold from 3-9hPa (default 4hPa)

Note: The prediction is for the upcoming 12 - 24 hours and does not necessarily reflect the current weather situation. It calculates on the basis of the pressure changes that have occurred during the past 24 hours the most likely weather forecast for the upcoming 12 - 24 hours. The weather forecast predicted has a probability of 70%. This means that observed over a period of several weeks, 7 from 10 forecasts for the upcoming 12 - 24 hours will be correct. Observing the forecast for only a few days is not sufficient to draw any conclusions with respect to accuracy.

Notes on the pressure sensitivity setting for weather forecasting
The pressure threshold can be set to suit the user's requirements for weather forecasting - anywhere from 2-4hPa (default 2hPa). Areas that experience frequent changes in air pressure require a higher setting compared to areas where the air pressure is stagnant. For example if 4hPa is selected, then there must be a fall or rise in air pressure of at least 4hPa before the weather station will register this as a change in weather.

Notes on the storm threshold setting
The storm threshold can be set to suit the user's requirements for storm forecasting - anywhere from 3-9hPa (default 4hPa). When there is a fall below the pressure threshold within any given 3 hour period, the storm forecasting will be activated and the clouds with rain icon as well as the tendency arrows will flash for 3 hours indicating the storm warning feature has been activated.

Weather forecast symbols:

Sunny
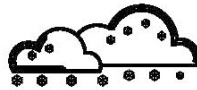
Partly Cloudy

Cloudy

Rainy

Snow

Storm

Snowstorm

Clear Night

Cloudy Night

Indoor Humidity

Press the **MENU** key six times to select the INDOOR HUMIDITY section, the INDOOR HUMIDITY section digits will start flashing. Press the **UP** or **DOWN** key to change the humidity high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Indoor humidity low alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum humidity (since last reset).   Resetting the maximum indoor humidity value - when both the indoor humidity value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum indoor humidity value will be reset to the current reading.
- Minimum humidity (since last reset).   Resetting the minimum indoor humidity value - when both the indoor humidity value and MIN icon are flashing, hold the **ENTER** key for 3s, the minimum indoor humidity value will be reset to the current reading.
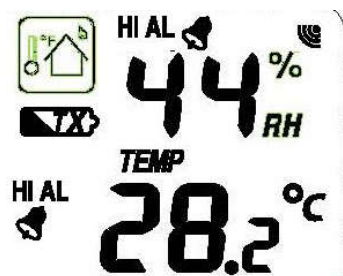
Indoor Temperature

Press the **MENU** key seven times to select the INDOOR TEMPERATURE section, the INDOOR TEMPERATURE section digits will start flashing. Press the **UP** or **DOWN** key to change the temperature unit between °C and °F.

Press the **ENTER** key to select the following modes:
- Indoor temperature high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Indoor temperature low alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum temperature (since last reset).   Resetting the maximum indoor temperature value - when both the indoor temperature value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum indoor temperature value will be reset to the current reading.
- Minimum temperature (since last reset).   Resetting the minimum indoor temperature value - when both the indoor temperature value and MIN icon are flashing, hold the **ENTER** key for 3s, the minimum indoor temperature value will be reset to current reading.

Outdoor Humidity

Press the **MENU** key eight times to select the OUTDOOR HUMIDITY section.   Procedures and settings are similar to Indoor Humidity above.

Outdoor Temperature

Press the **MENU** key nine times to select the OUTDOOR TEMPERATURE section, the OUTDOOR TEMPERATURE section digits will start flashing. Press the **UP** or **DOWN** key to change the temperature display mode between Temperature, Wind Chill and Dew Point.

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Temperature unit display °C or °F.
- Outdoor temperature high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Outdoor temperature low alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum temperature (since last reset).   Resetting the maximum outdoor temperature value - when both the outdoor temperature value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum outdoor temperature value will be reset to the current reading.
- Minimum temperature (since last reset).   Resetting the minimum outdoor temperature value - when both the outdoor temperature value and MIN icon are flashing, hold the **ENTER** key for 3s, the minimum outdoor temperature value will be reset to the current reading.

UV Index

Press the **MENU** key ten times to select the UV INDEX section, the UV INDEX section digits will start flashing. Press the **UP** or **DOWN** key to change the UV high alarm (press ON/OFF to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.

The UV Index has a scale of 1-12 as follows:

Extreme:	10, 11, 12
Very High:	7, 8, 9
High	5, 6
Moderate:	3, 4
Low:	0, 1, 2

Wind

Press the **MENU** key eleven times to select the WIND section, the WIND section digits will start flashing. Press the **UP** or **DOWN** key to shift the display between Average wind speed and Gust (default Average wind speed).

Note: Average wind speed is the average speed over the 48 second period between signal transmissions. In gusty conditions this may appear as though wind speed is being under reported as low winds and high winds are averaged across the 48 second interval.   Setting wind speed to Gust will display the maximum wind speed during the 48 second period which can often be more meaningful in these conditions.

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Wind speed units - select between km/h, mph, m/s, knots, bft.
- Wind speed high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Wind direction alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum wind speed (since last reset).   Resetting the maximum wind speed value - when both the wind speed value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum value will be reset to the current reading.

Light

Press the **MENU** key twelve times to select the LIGHT section, the LIGHT section digits will start flashing. Press the **UP** or **DOWN** key to change the light intensity display mode between W/M^2, FC and LUX.

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Light intensity high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol 🔔 appears in the display.
- Maximum light intensity value (since last reset).   Resetting the maximum light intensity value - when both the light intensity value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum light intensity value will be reset to the current reading.

Rain

RAIN
1h
0.0 mm

Press the **MENU** key thirteen times to select the RAIN section, the RAIN section digits will start flashing. Press the **UP** or **DOWN** key to change the period over which rain is measured (1h, 24h, Week, Month and Total rain).   **Note:** The 24h setting resets at midnight each day.

Press the **ENTER** key to select the following modes, then press the **UP** or **DOWN** key to set the value:
- Rainfall units - select between mm and inch.
- Rain high alarm (press **ON/OFF** to enable/disable).   If the alarm is enabled, an alarm symbol appears in the display.
- Maximum rainfall (since this was last reset).   Resetting the maximum rainfall value - when both the rain value and MAX icon are flashing, hold the **ENTER** key for 3s, the maximum rain value will be reset to the current reading.
- Clearing Total rainfall - when both the Total rain value and the word CLEAR are flashing, hold the **ENTER** key for 3s, the Total value will be reset to zero (1h, 24h, Week, and Month rain values will be reset to zero automatically).

Memory

Press the HISTORY key to activate the history data display.   Press the **DOWN** key to toggle backwards to see earlier weather history data together with its time stamp, press the **UP** key to see more recent weather history.   When the history data is displayed, the corresponding time will be displayed in the time section area (the history data saving interval is preset to 30 minutes).

Pressing the ENTER key will trigger the memory clear procedure, the word "CLE" will appear and the memory usage icon will be flashing.   Pressing and holding the **ENTER** key for 3 seconds will clear the memory.

Note: Historical values for some variables are only available once downloaded to PC and will appear as dashes on the Base Station.

Reset To Factory Default Settings
While in normal display, press and hold the **UP** key for 20 seconds to reset all settings to the default settings.

PC Connection

An important feature of the WS3085 is the capability for the recorded data to be downloaded, stored and displayed on your PC.

Data Storage

The Base Station allows the internal storage of up to 3,264 complete sets of weather data with time and date. These data sets are stored in non-volatile ring buffer memory (EEPROM) and will not be lost in the event of an interruption of power supply (e. g. change of batteries). When the memory capacity of the weather station is exhausted the oldest data sets stored will be overwritten by the new ones.

Data Recall

Certain weather data or setting values can only be read out, processed, and displayed by means of a PC.

Software Download

Note: No CD is contained with this unit please download the current version of Cumulus 1 software, or of EasyWeather Plus and our Basic Installation Guide by entering the link below into your browser's address bar:

www.aercusinstruments.com/downloads/

This software allows the display, storage, and printing of historical data.   In addition the software allows the data to be uploaded and displayed on a website.

Cumulus has a comprehensive Wiki and Support Forum for any software related issues:

cumulus.hosiene.co.uk

Note: To get accurate sunrise and sunset data make sure to enter the Latitude and Longitude for your location in the boxes provided in the centre of the Station Settings panel.   Latitude and Longitude for your location can be found here:

www.findlatitudeandlongitude.com

Trouble Shooting

Problem	Solution
I am not receiving any outside data.	Check that batteries in both units are fresh and fully charged. Alkaline batteries slow down and freeze in colder temperatures which leads to signal dropouts so we recommend Lithium batteries in colder climates. Also avoid rechargeable batteries as many are 1.2V (standard 1.5V required) and they also leak their peak charge quickly even if they are 1.5V. Put the batteries in the receiver last to force a proper resync. Check that the transmitter is not out of range. Test this by taking the receiver closer to the transmitter, remove and reinsert the batteries and wait for a few minutes to see whether the signal is picked up. Check for sources of interference (cordless phones, baby monitors, PC monitors etc). If this is an issue the console and/or transmitter will need to be relocated. If none of these are causing the problem you may have a faulty transmitter.
My wind speed appears to be under reporting.	When set to Average, wind speed is measured as the average speed recorded over the 48 second period between transmissions. In gusty weather this can appear as though it is under reading. Set this to Gust (see Wind section above) to view the maximum wind speed during each 48 second period.
My rain gauge is under reporting rainfall or not recording it at all.	Remove the cover from the rain gauge and check for spider webs etc that may be impeding the tipper's motion. Tip the tipper back and forth, each tip should register as 0.3mm on the console if it is operating correctly (remember the transmission interval is every 48 seconds so allow sufficient time for the console to register the tips).
My rain gauge is over reporting rainfall.	Insecurely mounted sensor trees can also sway in strong winds and cause false rain readings.

Specifications

Outdoor data

Transmission distance in open field:	Up to 100m (line of sight)
Frequency:	433 MHz
Temperature range:	- 40°C to +60°C
Resolution:	0.1°C
Measuring range rel. humidity:	10% to 99%
Rain volume display:	0 – 9,999mm
Resolution:	0.3mm (if rain volume < 1,000mm)
	1mm (if rain volume > 1,000mm)
Wind speed:	0-160kph
Light:	0-400k Lux
Measuring interval thermo-hygro sensor:	48 sec
Measuring interval UV and Light sensors:	60 sec
Water proof level:	IPX3

Indoor data

Measuring interval pressure / temp:	48 sec
Indoor temperature range:	0°C to +50°C
Resolution:	0.1°C
Measuring range rel. humidity:	10% to 99%
Resolution:	1%
Measuring range air pressure:	300-1,100hPa (8.85-32.5inHg)
Resolution:	0.1hPa
Alarm duration:	120 sec

Power consumption

Base station	3xAA 1.5V batteries
Remote sensor:	2xAA 1.5V batteries

Contact Information

Purchased in UK/EU: Please contact our local distributor Greenfrog Scientific greenfrogscientific.co.uk and their team will be happy to help. Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

Purchased in AUSTRALIA: Please contact our local distributor Monax Test & Weather monaxtestandweather.com.au and their team will be happy to help. Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

Purchased in NEW ZEALAND: Please contact our local distributor Scientific Sales scientificsales.co.nz and their team will be happy to help. Genuine faults can typically be diagnosed without requiring the unit to be returned and replacement parts sent quickly if needed.

For all others please contact the retailer who sold you this item.

EU DECLARATION OF CONFORMITY

Hereby, Aercus Instruments, declares that this Wireless Weather Station (Model: WS3085) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.   A copy of the signed and dated Declaration of Conformity is available on request from contact@aercusinstruments.com.

COUNTRIES RTTE APPROVAL COMPLIED

All EU countries

This handbook may contain mistakes and printing errors. The information in this handbook is regularly checked and corrections made in the next issue. We accept no liability for technical mistakes or printing errors - or their consequences.

DECLARATION DE CONFORMITE UE

Par la présente, Aercus Instruments, déclare que cette station météo sans fil (Modèle : WS3085) est conforme aux exigences essentielles et autres dispositions pertinentes de la Directive 1999/5/CE.   Une copie de la Déclaration de conformité datée et signée est disponible sur simple demande auprès de contact@aercusinstruments.com.

CONFORMITE AUX EXIGENCES NATIONALES RTTE

Tous les pays de l'Union européenne

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