smartwares®

Wireless Weather Station

Manual

(SHS-45000EU)

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Quick Start Procedure

Installing your weather station is quick and easy!

1. Insert batteries in the main console unit and power up the display with the adapter.
2. Pair the remote sensors (thermometer, wind meter, rain meter) with the main console with the following procedure:
    a. Open the battery case on the sensor
    b. Press the LINK button on the main console
    c. Insert the batteries in the sensor (within 30 seconds)
    d. The LINK led will blink for a second to indicate successful paring.
3. Measurements from the remote sensors are now visible on the display.
4. Mount the sensors on their designated location

Find more detailed instructions and information in the remainder of this manual.

Introduction

Congratulations on your purchase of the Wireless Weather Station. The weather station consists of a main console unit as well as an assortment of remote sensors which collect and transmit a wide range of weather data, including outdoor temperature, humidity, wind speed and direction, rain amount and rain rate. With 868 Mhz technology, you will experience a great wireless range and high reliability.

Main Console Unit

The main console unit features a radio-controlled atomic precision clock with alarm and weather forecast. It measures indoor temperature and humidity, and displays weather data collected by the remote weather sensors. It also provides indication of the indoor/outdoor temperature, pressure and humidity trends, and celestial information such as moon phase, and sunrise/set times.

Remote Weather Sensors

The remote weather sensors include a thermo-hygrometer, anemometer (wind sensor) and rain sensor. All data collected by the sensors is transmitted to the main console unit by wireless RF. The weather station supports a maximum of 5 pairings with thermo-hygrometers, allowing 5 measurements of temperature/humidity (from different locations) on the display.

Features

Weather Forecast

Sunny, Partly Cloudy, Cloudy, Slight Rain, Heavy Rain, Snow and Unstable Weather conditions

Pressure

Current or historical pressure (mBar/ hPa, mmHg or inHg)
Altitude or sea level pressure adjustment for atmospheric pressure compensation
Pressure trend indication
Sea-level pressure history for the last 24 days
Sea-level pressure history bar chart

Moon phase

12 steps of moon symbols
Scans moon phase for year 2000 to 2099
Moon phase history for the last or future 39 days

Radio Controlled Clock

Time and date synchronized by radio signal DCF-77 to atomic clock precision (time and date also manually adjustable)
Clock and Calendar (12hr/ 24 hr) (month/day or day/month)
Different combinations of clock and calendar displays
6 languages for day of week (English/ German/ French/ Italian/ Spanish/ Dutch)

Alarms

Single alarm: activated once at specified time
Weekday alarm: activated everyday from Monday to Friday at specified time
Pre-alarm: activated ahead of single or weekday alarm if channel 1 temperature falling to +2ºC or below.   (Fixed 30 minutes)
Programmable snooze function (1-15 minutes)

Sunrise time and sunset time

Calculates sunrise/set times with geographical information provided by user

(DST, zone time offset, latitude, longitude)

Remote temperate and relative humidity, with trend indication

Indoor and outdoor temperature and relative humidity display (ºC or ºF)
Temperature and relative humidity trend indication
Dew point display
Max and Min memory for temperature and relative humidity

Comfort level indicator

Analyzes current environmental conditions (Comfort, Wet and Dry)

Rainfall measurement

Records rainfall amount for the last hour, last 24 hours, last day, last week and last month (inch or mm).
Daily rainfall alert if rainfall for the current day exceed pre-specified amount.

Wind

Temperature at place of anemometer.
Temperature adjusted to wind chill factor. (ºC or ºF)
Wind direction compass display. Wind direction angles available as compass points or bearings.
Average wind speed and gust speed (mph, m/s, knots, and km/h)
Daily Maximum wind speed and gust speed memory.
Wind speed alert for average wind speed and wind gust speed.
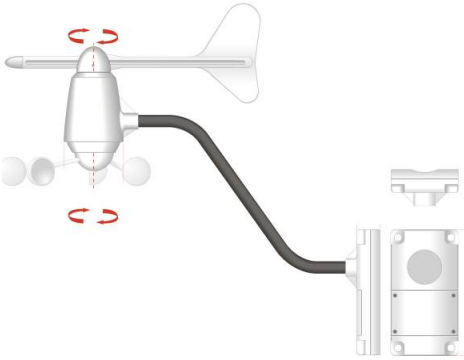
Contents of Complete Weather Station Kit

Before installing your weather station, please check that the following items are complete:

Hardware Components		Fittings
	Main Console Unit	AC/DC 7.5V output adaptor
	Thermo-Hygro Sensor	
	Rain Sensor: -Funnel shaped Lid with Battery Hatch -Sensor Base -Bucket See-saw Mechanism -Protective Screen	4 screws for securing unit to ground

	Anemometer (Wind Sensor): -Wind Cups -Wind Vane - Anemometer arm - Anemometer base	4 screws for securing unit to vertical surface

Installing your weather station

Setting up the Remote Weather Sensors

To pair the remote sensors with the main console unit, first connect the AC/DC adaptor with the main console and press the 'ON' button to power up. Keep the sensors nearby. The procedure for pairing a sensor to the main console is as follows:

1. Press the 'link' button on the main console
2. Insert the required batteries into the sensor (within 30 seconds of pressing 'link').
3. The red LED on the display will light up for a second, indicating a successful paring.

Pair the sensors within line of sight of the console unit. When pairing is complete, mount the sensors on their designated location, but always first test reception before permanently mounting your weather station. Transmission range may be affected by trees, metal structures and electronic appliances.

Setting up the Main Console Unit

1. Insert 2x "AA" size 1.5V batteries. These serve as backup batteries only, for when power is temporarily interrupted. Always use the AC/DC adapter as well.
2. Connect the AC/DC adaptor.
3. If placing the console unit on a table or horizontal surface, set up the table stand and you can put it on the table.
4. If mounting the console unit on a wall or vertical surface, remove the table stand and use the fitting provided.

Placement tips:

Make sure that the console unit is within receiving range of all remote sensors.

The console unit measures indoor temperature, humidity, pressure and receives signals from all remote sensors and radio-clock broadcasts. Avoid

placing the console unit in the following areas:

- Direct sunlight and surfaces which radiate and emit heat.
- Near heating and ventilation devices, such as heating ducts or air conditioners.
- Areas with interference from wireless devices (such as cordless phones, radio headsets, baby listening devices) and electronic appliances.

Setting up the Thermo-Hygro Sensor(s)

1. Open the latch at the base of the thermo-hygro sensor.
2. Press the 'link' button on the main console.
3. Insert 2 x "AA" size 1.5V batteries (within 30 seconds).
4. Replace the latch and mount unit at desired location.

Placement tips:

- The thermo-hygro sensor should be in an area with free air circulation and sheltered from direct sunlight and other extreme weather conditions. Place the unit in a shaded area, such as under a roof.
- Use the wall mount and fittings provided if mounting the unit on a vertical surface.
- Avoid placing the sensor near sources of heat such as chimneys.
- Avoid any areas which collect and radiate heat in the sun, such as metal, brick or concrete structures, paving, patios and decks.
- Ideally, place the sensor above natural surfaces such as a grassy lawn.
- The international standard height for measurements of air temperature is at 1.25m (4 ft) above ground level.

Setting up the Rain Sensor

1. Unlock the funnel-shaped top of the rain sensor by turning both knobs on the sides of the rain sensor in an anti-clockwise direction.
2. Press the 'link' button on the main console.
3. Lift the top off the base and insert 2x "AA" size 1.5V batteries into the battery holder (within 30 seconds).
4. Replace the lid and secure into place by turning the knobs clockwise.

5. Place the rain sensor in a location such that precipitation can fall directly into the sensor, ideally 2-3 ft above the ground.
6. It may be secured into place by using the four screws provided.
7. The sensor must be accurately level for optimum performance. To check if the sensor is level, remove the lid and check if the ball bearing inside is at the midpoint of the leveler. Additionally, a bubble level or carpenter's level may be used.
8. Attach the protective screen onto the top of the lid. The screen will prevent any debris entering the sensor.

Placement tips:
- The rain sensor should be placed in an open area away from walls, fences, trees and other coverings which may either reduce the amount of rainfall into the sensor, deflect the entry of wind-blown rain, or create extra precipitation runoff. Trees and rooftops may also be sources of pollen and debris.
- To avoid rain shadow effects, place the sensor at a horizontal distance corresponding to two to four times the height of any nearby obstruction.
- It is important that rain excess can flow freely away from the sensor. Make sure that water does not collect at the base of the unit.
- The rainfall measurement mechanism utilizes a magnet, hence do not place any magnetic objects around the proximity of the sensor.

Setting up the Solar Powered Wind Meter

1. Assemble the wind cups to the anemometer arm
2. Attach the assembled anemometer to the base.
3. Open the battery holder in the base by unscrewing the screws.
4. Make sure to *disconnect* the cable from the battery back that is used by the solar panel (it might already be disconnected).
5. Press the 'link' button on the main console.
6. Insert 2 x "AA" size 1.5V batteries into the battery holder in the base (within 30 seconds).
7. Now reconnect the cable from the battery back.
8. Mount the anemometer onto a vertical surface, using the fittings provided.

The wind direction measurement is calibrated in the factory. If you find the wind direction to be inaccurate, it is possible to calibrate the wind meter with the following procedure:

a. Insert the batteries
b. Point the wind vane towards the north. Use a compass or map if necessary.
c. Use a pin to press the "SET" key which is in the battery compartment of the wind sensor.

Placement tips:

- Check that wind can travel freely around the anemometer and is not distorted by nearby buildings, trees or other structures.
- For better results, place the anemometer at least 3m above local structures and obstacles. The ground creates a frictional effect to wind flow and will attenuate readings.
- Aim for maximum exposure of the anemometer to the commonest wind directions in your area.
- The official mounting location for anemometers is 10m (33 ft) above ground level in a clear unobstructed location.

Connecting with HomeWizard

Visit www.homewizard.com for more information

HomeWizard is a device that easily lets you connect wireless smart home devices and control them from a smartphone or tablet with one easy-to-use app. This weather station is HomeWizard compatible. When connected with HomeWizard, you will be able to view real-time data in the HomeWizard app, receive push notifications for weather conditions and share your own weather station online.

First, make sure that all sensors are properly connected to the main console. HomeWizard only synchronizes with the main console unit and gets all information of individual sensors from here.

1. Start the HomeWizard app and select 'Menu > Add sensor > Weather Station (868)'.
2. Select 'pair' and press the LINK button on the main console.

Using your Weather Station

<u>Buttons</u>

UP (+)	- Switches to next mode in anti-clockwise direction - Increment for setting parameters
DOWN (-)	- Switches to next mode in clockwise direction - Decrement for setting parameters
SET	- Rotates display for current mode - Press and hold to enter setup or change units - Confirmation for setting parameters
MEMORY (MEM)	- Shows records for moon phase, temperature, humidity, rain and wind.
HISTORY	- Shows history for sea-level pressure
ALARM/CHART	- Shows time alarms and alerts for temperature, rain and wind. - Press and hold to enter alarm/alert setup - Press and hold in Pressure and Weather Forecast Mode to view different bar-charts
CHANNEL	- Changes temperature and humidity display to selected channel - Press and hold to enable cycling display of paired thermometers
SNOOZE	- Enters Snooze mode when alarm is activated
LINK	- Used for pairing the sensors with the main console.

Navigating between Different Modes

There are 6 modes available on the main console unit, and each one displays a different category of data. When display is in a certain mode, its corresponding icon will start flashing.

To navigate between the different modes from the main console unit, press UP (+) to cycle through the modes in a clockwise direction or DOWN (-) to cycle through the modes in an anti-clockwise direction.

Pressure and Weather Forecast Mode

- Current pressure, trend, and history bar-chart
- Weather forecast
- Moon phase

Moon Phase
TREND
Weather Forecast
Pressure Trend

Pressure and Weather Forecast Mode icon
SEA LEVEL
History Bar-chart for Pressure/ Temperature/ Humidity
History selection for Pressure and Moon Phase
HISTORY
2mB/hPa
Local Pressure/ Sea Level Pressure/ Altitude
hPa mBar   -24 -18 -12 -6 -3 -2 -1 0 Hr PRESSURE
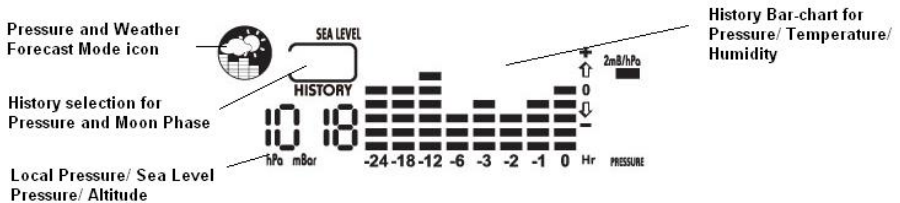
Clock and Alarm Mode

- Radio Controlled clock showing current time and calendar
- Single alarm, weekday alarm and pre-alarm

Radio Controlled Clock Signal Status

Clock Mode icon

Battery Status

Single Alarm

Weekly Alarm

Time/ Date Display

Weekday/ City/ Second/ Year/ UTC time Display

12:08 MOMIP S W

SUNRISE SUNSET **Sunrise/Sunset Mode**

- Sunrise and sunset times
- Longitude and Latitude of local area

Sunset time/ Longitude

NEXT DAY

Sunrise time/ Latitude

6:08 SUNRISE 18:10 SUNSET

Sunrise/ Sunset icons
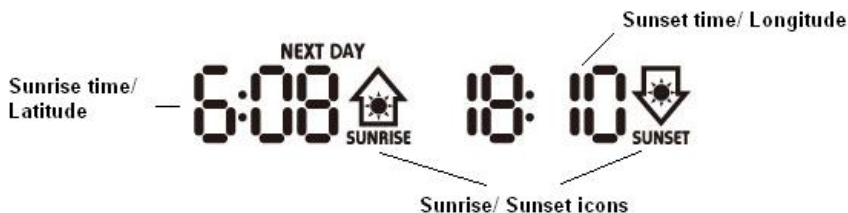
IN **Temperature and Humidity Mode**

- Temperature and humidity trend and readings for indoor and selected channel
- Comfort level
- Dew point
- Temperature alerts

15

Low battery icon for sensor unit
Channel Temp. Trend
Channel Temp.
Temp. Alert
Channel Humidity
Channel and Reception status
Channel Humidity Trend
CH
Cycling Display
Min/Max Display
MAX
Indoor Temp. Trend
Temperature and Humidity Mode icon
IN
Indoor Temp.
COMFORT
Comfort Level
Indoor Humidity Trend
Indoor Humidity
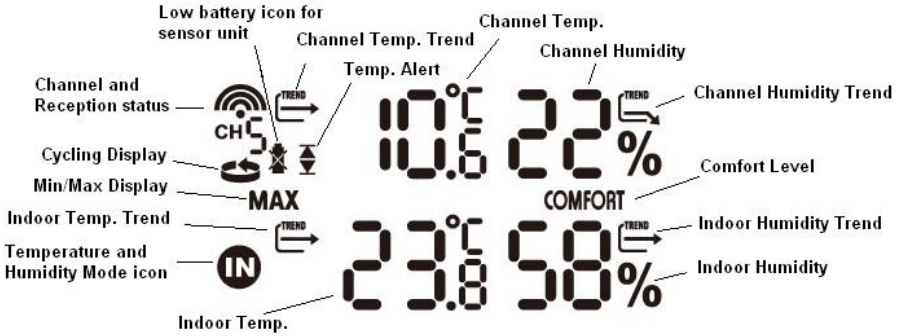
Rain Mode

- Precipitation amount for last hour, last 24 hour, yesterday, last week and last month
- Rainfall alert

Rain Statistic
Rainfall
Rain Mode icon — RAIN
LAST HOUR
LAST 24Hr
YESTERDAY
LAST WEEK
LAST MONTH
Low battery icon for Rain sensor
ALARM
HI
inch
mm/hr
Rain Alert
Rain Rate Display
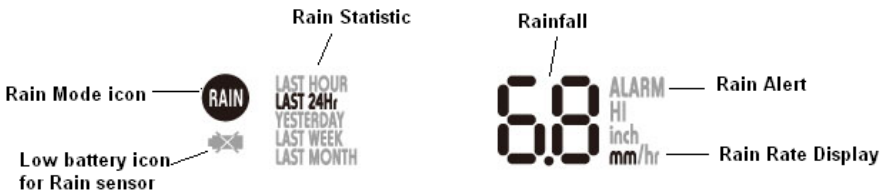
Wind Mode

- Wind Chill
- Temperature at place of anemometer
- Wind direction
- Wind speed
- Wind gust
- Alert for wind speed and wind gust speed

Wind Chill Temperature/
Temperature at Wind Sensor

Wind Direction Animate
Compass Display

Wind Mode icon ──── **WIND CHILL** °C

IO.6

Low Battery icon for ────
wind sensor

N

W **NNW** E

S

Wind Direction in Compass
Points/ Bearings

DAILY MAX ALARM HI

Wind Speed/ Gust/ Max. ──── AVERAGE
Wind Speed/ Max/ Gust/
Wind Alert/ Gust Alert GUST

8.2 m/s
km/h
mph
knots
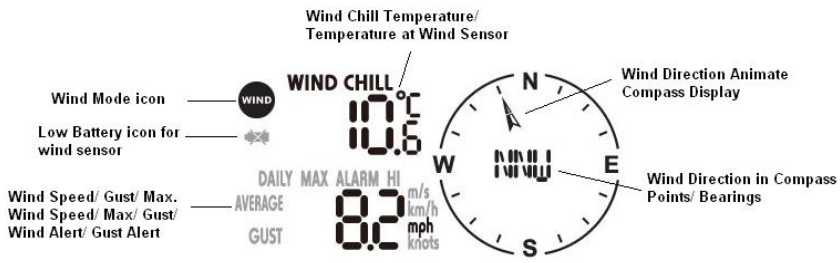
Using the Different Weather Modes

Pressure and Weather Forecast Mode

This part of the display indicates the current pressure, sea level pressure, weather forecast, moon phase and pressure trend.

A number of historical statistics can also be viewed, such as the sea-level pressure values for the last 24 hours, moon phase for the previous and next 39 days, as well as a pressure/ temperature/ humidity history bar-chart.

Pressure values may be displayed inHg, hPa/mBar or mmHg, and altitude values may be displayed in meters or feet.

Accessing Pressure and Weather Forecast Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the weather forecast icon on the upper left of the display starts flashing.

Setting Pressure Parameters during Initial Start-Up

During the initial start-up of the main console unit, all functions in Pressure and Weather Forecast mode will be locked until the pressure settings are configured.

1. Choose Pressure Units:
   The unit icon "inHg" or "mmHg" or "hPa/mBar" should be flashing.
   Press **UP (+)** or **DOWN (-)** to select pressure unit as inHg, hPa/mBar or mmHg
   Press **SET** to confirm your selection.
2. Choose Altitude Units:
   Press **UP (+)** or **DOWN (-)** to select altitude unit as feet or meters.
   Press **SET** to confirm your selection.
3. Set Altitude:
   Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
   Press **SET** to confirm your selection.
4. Upon completion the display will be returned to Pressure and Weather Forecast Mode.

Note: After initial start-up the altitude cannot be adjusted again until the main console unit is restarted.

Viewing Pressure and Altitude Data

In Pressure and Weather Forecast Mode, each press of **SET** rotates display between:

- Sea level pressure
- Local pressure
- Local altitude

Setting the Sea Level Pressure

5. In Pressure and Weather Forecast Mode, press **SET** until the sea level pressure is displayed.
6. Press and hold **SET**. The Sea Level Pressure display should be flashing.
7. Set Sea Level Pressure:
8. Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
9. Press **SET** to confirm your selection.
10. Upon completion the display will be returned to Pressure and Weather Forecast Mode.

Setting the Pressure and Altitude Units

1. In Pressure and Weather Forecast Mode, press **SET** until local pressure is displayed.
2. Press and hold **MEMORY (MEM)**. The pressure unit should be flashing.
3. Set Local Pressure Units:
   Press **UP (+)** or **DOWN (-)** to adjust value.
   Press **SET** to confirm your selection.
4. Set Altitude Units:
   Press **UP (+)** or **DOWN (-)** to adjust value.
   Press **SET** to confirm your selection.
5. Set Sea-Level Pressure Units:
   Press **UP (+)** or **DOWN (-)** to adjust value.

Press **MEMORY (MEM)** to confirm your selection.
6. Upon completion the display will be returned to Pressure and Weather Forecast Mode.

Viewing the Sea Level Pressure History

1. In all modes, pressing **HISTORY** will toggle the sea level pressure display.
2. When sea level pressure is displayed, press **HISTORY** repeatedly to view sea level pressure data for each of the last 24 hours.
3. If no buttons are pressed for 5s, the display automatically returns to Pressure and Weather Forecast Mode.

Viewing the Pressure/ Temperature/ Humidity Bar-Charts

The bar-chart on the display can be configured to display the history data for sea-level pressure, temperature or humidity for channel 1.
In Pressure and Weather Forecast Mode, press and hold **ALARM/CHART** to toggle the bar-chart between:
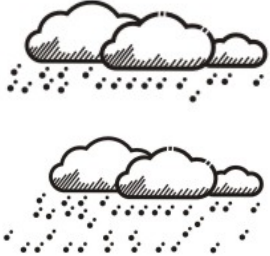
- Sea-level pressure ("PRESSURE" should be displayed)
- Temperature (Thermometer icon and "CH1" should be displayed)
- Humidity (RH icon and "CH1" should be displayed)

Viewing Moon Phase History and Forecast

1. In Pressure and Weather Forecast Mode, press **MEMORY (MEM)**.
2. "+ 0 days" should be flashing.
3. View Moon Phase History / Forecast:
   Press **UP (+)** or **DOWN (-)** to choose number of days forward (+ days) or backward (- days) from current date. Press and hold either button for fast advance.
4. The corresponding moon phase will be shown.
5. To exit, press **MEMORY (MEM)**.
   Otherwise, if no buttons are pressed for 5s the display automatically returns to Pressure and Weather Forecast Mode.

Understanding the Weather Forecast Display

Display	Weather Forecast Status
	Sunny
	Partly Cloudy
	Cloudy
or	Rain
	Unstable Weather
	Snow

NOTE:
- The accuracy of a general pressure-based weather forecast is about 70%.
- The weather forecasts. It may not necessarily reflect the current situation.
- The "Sunny" icon, as applies to night time, implies clear weather.

Understanding the Moon Phase Diagram

FULL   **LAST**   **NEW**   **FIRST**

Clock and Alarm Mode

The main console unit can be configured to display the time, calendar or UTC time. There are three time alarms available on the console unit:
Single alarm: activated once at specified time
Weekday alarm: activated everyday from Monday to Friday at specified time
Pre-alarm: activated at specified time interval (Fixed 30 min) ahead of weekday alarm, if channel 1 temperature falling to +2 ºC or below.
The snooze duration for the above alarms can also be programmed (0-15 min).

Accessing Clock and Alarm Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the clock icon beside the time/date display starts flashing.

Setting up the Time, Date and Language

1. In Clock and Alarm Mode, press and hold **SET** to enter clock and calendar setup.
   The day of week should start flashing in the display.
2. Set Language:
   Press **UP (+)** or **DOWN (-)** to select language for day of week: English, German, French, Italian, Spanish or Dutch
   Press **SET** to confirm your selection.
3. Select City Code:
   Press **UP (+)** or **DOWN (-)** to select city code for your local area.
   Press **SET** to confirm your selection.
4. Set Daylight Saving Time Option:
   Press **UP (+)** or **DOWN (-)** to turn DST option on or off. Press and hold

either button for fast advance.

Press **SET** to confirm your selection.

Repeat the above instructions to set year, month, day, calendar display format (day/month or month/day), time display format (12 hr/ 24 hr), local hour and local minutes.

5. Upon completion the display will return to normal Clock and Alarm Mode.

Note: Press and hold **SET** anytime during the setup to return to normal Clock and Alarm Mode. All settings made will be discarded.

Rotating between Different Clock/Calendar Displays

In Clock and Alarm Mode, each press of **SET** rotates clock display between:
- Hour: Minute: Weekday
- Hour: Minute for UTC (Coordinated Universal Time)
- Hour: Minute: City
- Hour: Minute: Second
- Month: Day: Year (or Day: Month Year depending on settings)

Activating/Deactivating the Time Alarms

1. In Clock and Alarm Mode, each press of **ALARM/CHART** rotates clock display between:
   Weekday Alarm Time (displays OFF if weekday alarm deactivated)
   - Single Alarm Time (displays OFF if single alarm deactivated)
   - Pre-Alarm Time (displays OFF if pre-alarm deactivated)
2. When the above alarms are displayed, pressing **UP (+)** or **DOWN (-)** will activate/deactivate the corresponding alarm.

Note: Press **SET** anytime during alarm selection mode to return to normal clock display.

Setting up the Time Alarms

1. In Clock and Alarm Mode, press **ALARM/CHART** to select alarm which you wish to configure.
   Press and hold **ALARM/CHART** until hour starts flashing in the display
2. Set Alarm Hour:

Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
Press **ALARM/CHART** to confirm your selection.

3. Set Alarm Minutes:
    Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
    Press **ALARM/CHART** to confirm your selection.

4. Set Duration of Snooze Function (all three alarms share same snooze time duration):
    Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
    Press **ALARM/CHART** to confirm your selection.

5. Upon completion the display will be returned to the alarm selection screen.

Note: Pre-alarm cannot be activated if weekday alarm or single alarm is not enabled.

Disabling/Entering Snooze when Time Alarms are Activated

To Enter Snooze:
Press **SNOOZE/LIGHT** to enable snooze function.
Note: Alarm will automatically enter snooze mode if no key is pressed after the alarm sounds for 2 minutes. This will occur for a maximum of three times.

To Disable Alarm(s):
Press **ALARM/CHART** to disable the alarm (s).

Note: For weekday alarm, pressing **ALARM/CHART** will only disable the alarm for the current day. The alarm will be activated again the next day (if it falls within Monday to Friday).

Activating/Deactivating Radio Clock Reception
The main console unit synchronizes the time and date with radio clock broadcasts to maintain atomic clock precision.

To turn this function on/off:

Press and hold **UP (+)**.
If RC reception is activated, a triangular tower icon will start flashing beside the clock icon.
If RC reception is deactivated, the triangular tower icon will disappear.

Icon	RC Reception Strength
(Flashing)	Undefined data
	Reception failed for 24 hours
	Weak signal, but can be decoded
	Strong signal

Note: The radio controlled signal for time (DCF 77) is transmitted from the central atomic clock in Frankfurt/Main in short intervals. It has a reception range of approx. 1500 km. Obstructions such as concrete walls can reduce the signal range.

Sunrise/Sunset Mode

The main console unit computes the sunrise and sunset times from the user-configured location data. This includes the longitude, latitude, time zone and DST (Daylight Saving Time). Choosing a suitable city code for your area will automatically generate the correct values for the location data.
Should you wish to input your own location data or if a suitable city code could not be found, choose "USR" as the city code during setup.
A searching function is also available, which allows the sunrise/sunset times for different dates to be viewed.

Accessing Sunrise/Sunset Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the sunrise and sunset icons on the lower left of the display start flashing.

Setting up the Location Data

1. In Sunrise/Sunset Mode, press and hold **SET** to enter location data setup.
2. The city code in the Time and Alarm display should start flashing.
3. Set City Info:
    Press **UP (+)** or **DOWN (-)** to select city code for your local area. The corresponding longitude and latitude will be shown along with the city. Should you wish to input your own geographical coordinates, choose "USR" as the city code
    Press **SET** to confirm your selection.
4. If "USR" was chosen, you will be asked to input your geographical coordinates.
    Set Degree of Latitude:
    Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
    Press **SET** to confirm your selection.
5. Repeat above procedure to set minute of latitude, degree of longitude, minute of longitude, time zone of the city, and DST selection.
6. Upon completion the display will be returned to Sunrise/Sunset Mode.

Note: Press and hold **SET** anytime during the setup to return to normal Clock and Alarm Mode. All settings made will be discarded.

Viewing the Location Data

In Sunrise/Sunset Mode, each press of **SET** rotates display between:
*   Time and sunrise/ sunset Times
*   Calendar and sunrise/ sunset Times
*   Calendar and longitude/ latitude

Viewing Sunrise/Sunset Times for Different Dates

1. In Sunrise/Sunset Mode, press **MEMORY (MEM)**.
    The date should be flashing.

2. Press **UP (+)** or **DOWN (-)** to adjust date. Press and hold either button for fast advance.
3. The corresponding sunrise and sunset times will be displayed for the selected date.
4. Press **MEMORY (MEM)** or **SET** to return display to Sunrise/Sunset Mode.

Understanding the Sunrise/Sunset Display

The sunrise time being displayed differs during the morning and the afternoon/night.

From 12 am to 12 pm: The sunrise time for the current day will be displayed.
From 12 pm to 12 am: The sunrise time for the next day will be displayed.

"NEXT DAY" icon will be displayed above the sunrise time.

At certain locations (especially those at high latitudes), sunrise and sunset events may not occur within a 24 hour time frame.

Display	Sunrise status	Display	Sunset status
FULL	Sunrise at previous day	FULL	Sunset at next day or later
----	No sunrise for the whole day	-----	No sunset for the whole day

Temperature and Humidity Mode

The weather station supports pairing with up to 5 remote thermo-hygro sensors. The temperature may is shown in degrees Celsius ºC. The trend (rising, steady or falling) of all values is also indicated on the display.
The main console unit uses the indoor temperature and humidity data to compute a comfort level rating of Wet, Comfort or Dry.
A temperature alert function is available for each channel. It can be programmed to sound if the channel temperature exceeds or falls below the pre-configured upper and lower limits.

Note: The temperature alerts have a 0.5 ºC hysteresis to prevent the alerts

from sounding constantly due to small fluctuations near the alert value. This means that after the temperature reaches the alert value, it will have to fall below the alert value plus the hysteresis to deactivate the alert.

Accessing Temperature and Humidity Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the IN icon on the upper right of the display starts flashing.

Viewing Temperature and Humidity Display for each Channel

For Static Display:
In Temperature and Humidity Mode, each press of **CHANNEL** rotates display between different channels.

For Cycling Display:
To enable automatic rotating between different channel displays, press and hold **CHANNEL**, until the ↻ icon is displayed. Each valid channel will now be alternately displayed for 5s.

Rotating Between Temperature and Dew Point Display

In Temperature and Humidity Mode, each press of **SET** rotates temperature display between:
- Temperature and Relative Humidity
- Dew Point Temperature and Relative Humidity

Activating/Deactivating the Temperature Alerts
1. In Temperature and Humidity Mode, each press of **ALARM/CHART** rotates channel temperature display between:
   - Current Temperature for corresponding channel
   - Upper Temperature Alert (displays OFF if deactivated): ▲ icon displayed
   - Lower Temperature Alert (displays OFF if deactivated): ▼ icon displayed
2. When the above alerts are displayed, pressing **UP (+)** or **DOWN (-)** will activate/deactivate the corresponding alert.

Setting up the Temperature Alerts

1. In Temperature and Humidity Mode, press **ALARM/CHART** to select alarm which you wish to configure.
   Press and hold **ALARM/CHART** until channel temperature and ▲or▼ icon starts flashing in the display.
2. Set Value for Temperature Alert:
   Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
3. Press **ALARM/CHART** to confirm your selection.
4. Upon completion the display will be returned to the temperature alert selection screen.

Disabling when Temperature Alarms are Activated

To Disable Temperature Alarm(s):
Press **ALARM/CHART** to disable the alarm (s).

Viewing the Max/Min Channel Temperature and Humidity

In Temperature and Humidity Mode, each press of **MEMORY (MEM)** rotates channel temperature and humidity display between:
- Current temperature and humidity at remote sensor
- Minimum temperature and humidity at remote sensor
- Maximum temperature and humidity at remote sensor

Resetting the Max/Min Channel Temperature and Humidity Memory

In Temperature and Humidity Mode, press and hold **MEMORY (MEM)** to clear memory for all channels.

Remote Sensor Status

The wave icon above the current channel display shows the connection status of the corresponding remote sensor.

Icon	Status
	Searching for remote sensor signals
	Corresponding remote sensor successfully linked
	Communication error between remote sensor and main console

Activating Main Console Unit to Search for All Remote Sensor Signals

The main console unit may be manually activated to search for signals from all remote sensors. Only use this function of the 'communication error' icon is visible on the main console:

Press and hold **DOWN (-)** to enforce a search.

Rain Mode

The main console unit records the total amount of rainfall for the last hour, last 24 hours, yesterday, last week and last month. The rainfall may be displayed in mm or inches.

A daily rainfall alert function is available which can be programmed to sound if the daily rainfall exceeds a pre-configured limit.

Accessing Rain Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the RAIN icon on the display starts flashing.

Viewing Rain Statistics

In Rain Mode, each press of **SET** or **MEMORY (MEM)** rotates display between different rain statistics:

- Last hour
- Last 24 hour
- Yesterday
- Last week

- Last month

Tip: For an estimation of the rain rate, the Last Hour rainfall value can be understood as "inch/hr" or "mm/hr".

Resetting the Rainfall Statistics Memory

In Rain Mode, press and hold **MEMORY (MEM)** to reset all rainfall statistics.

Setting Units for Rain Display (inch or mm)

In Rain Mode, press and hold **SET** to convert units between mm and inches.

Activating/Deactivating the Daily Rainfall Alert

1. In Rain Mode, each press of **ALARM/CHART** rotates display between the current rainfall statistics and the daily rainfall alert ("ALARM HI" will be displayed).
   If the alert is deactivated, "OFF" will be shown, otherwise the rainfall alert value is shown.
2. When the rainfall alert is displayed, pressing **UP (+)** or **DOWN (-)** will activate/deactivate it.

Setting up the Daily Rainfall Alert

1. In Rain Mode, press **ALARM/CHART** to display rainfall alert.
2. Press and hold **ALARM/CHART** until rainfall alert and "ALARM HI" starts flashing in the display.
3. Set Value for Rainfall Alert:
   Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
   Press **ALARM/CHART** to confirm your selection.
4. Upon completion the display will be returned to the rainfall alert display.

Disabling when Daily Rainfall Alert is Activated

To Disable Rainfall Alert:

1. Press **ALARM/CHART** to disable the alert.

Wind Mode

The wind direction is shown by an animated compass display. Its angle can be displayed as compass points (i.e. NW) or in bearings from the north (i.e. 22.5º). The upper left of the wind display can be set to indicate the temperature at the anemometer or the temperature adjusted with a wind chill factor.

The lower left of the wind display indicates the average wind speed for the last 10 minutes, as well as gust, wind speed alert and gust alert information. It can also show records of the maximum values of wind speed and gust attained for the current day.

The wind speed and gust alert functions can be programmed to sound if the wind speed or gust exceeds a pre-configured limit. The wind speed may be displayed in km/h, mph, m/s or knots.

Note: The wind speed alert has a 5 mph hysteresis and the wind gust speed alert has a 7 mph hysteresis. The hysteresis is to prevent the alerts from sounding constantly due to small fluctuations near the alert value. This means that after the wind speed reaches the alert value, it will have to fall below the alert value plus the hysteresis to deactivate the alert.

Accessing Wind Mode

From the main console unit: Press **UP (+)** or **DOWN (-)** until the WIND icon on the display starts flashing.

Configuring Wind Display

In Wind Mode, each press of **SET** rotates display between:
- Temperature with wind chill, wind direction in bearings
- Temperature with wind chill, wind direction in compass points
- Temperature at anemometer, wind direction in compass points
- Temperature at anemometer, wind direction in bearings

Setting Units for Wind Speed Display (km/h , mph, m/s or knots)

In Wind Mode, press and hold **SET** to convert wind speed units between km/h, mph, m/s or knots.

Viewing Wind Statistics

In Wind Mode, each press of **MEMORY (MEM)** rotates wind speed display between:
- Current wind speed
- Daily maximum wind speed ("DAILY MAX" is displayed)
- Gust speed ("GUST" is displayed)
- Daily maximum gust speed ("GUST DAILY MAX" is displayed)

Resetting the Wind Statistics Memory

In Wind Mode, press and hold **MEMORY (MEM)** to reset all wind statistics.

Activating/Deactivating Wind Alerts

1. In Wind Mode, each press of **ALARM/CHART** rotates wind speed display between:
   - Current wind speed
   - Wind speed alert ("ALARM HI" displayed)
   - Gust alert ("GUST ALARM HI" displayed)

   If the alert is deactivated, "OFF" will be shown, otherwise the alert value is shown.
2. When a wind alert is displayed, pressing **UP (+)** or **DOWN (-)** will activate/deactivate it.

Setting up the Wind Alerts

1. In Wind Mode, press **ALARM/CHART** to select alarm which you wish to configure.
2. Press and hold **ALARM/CHART** until alert and corresponding icon starts flashing in the display.
3. Set Value for Alert:
   Press **UP (+)** or **DOWN (-)** to adjust value. Press and hold either button for fast advance.
   Press **ALARM/CHART** to confirm your selection.
4. Upon completion the display will be returned to the wind alert selection screen.

Disabling when Wind Alert is Activated

Press **ALARM/CHART** to disable the alert.

Maintenance

Changing Batteries

The battery statuses of the sensors are checked every hour. If the low battery indicators light up, replace the batteries for the corresponding unit immediately.

Changing Batteries for the Remote Sensors

1. Replace the batteries following the setup instructions for the corresponding sensor.
2. When the batteries are properly installed, the sensor will resume sending signals to the main console unit.

Cleaning

The main console unit and outer casings for the remote sensors can be cleaned with a damp cloth. Small parts can be cleaned with a cotton tip or pipe-cleaner.

Never use any abrasive cleaning agents and solvents. Do not immerse any units with electronic parts in water or under running water.

Anemometer

-Check that the wind vane and wind cups can spin freely and are free from dirt, debris or spider webs.

Rain Sensor

Like all rain gauges, the rain sensor is prone to blockages due to its funnel shape. Checking and cleaning the rain sensor from time to time will maintain the accuracy of rain measurements.

- Detach the protective screen and lid. Remove any dirt, leaves or debris by cleaning the items with soapy water and a damp cloth. Clean small holes and parts with a cotton tips or pipe-cleaner.
- Look out for spiders or insects that might have crawled into the funnel.
- Also clean the swinging mechanism with a damp cloth.

Troubleshooting

"The display shows "0.00" for weather parameter(s)"

The display will show "0.00" when the wireless link is lost with the remote sensor.

Check or replace the batteries for the corresponding sensor.

If the above does not solve the problem, check the wireless transmission path from the corresponding sensor to the main console unit and change their locations if necessary.
Although wireless signals can pass through solid objects and walls, the sensor should ideally be within the line of sight of the console unit.

The following may be the cause of reception problems:
- Distance between remote sensor and main console unit too long.
- Signal shielding materials such as metal surfaces, concrete walls or dense vegetation in the path of transmission.
- Interferences from wireless devices (such as cordless phones, radio headsets, baby listening devices) and electronic appliances.

"The weather forecast is inaccurate."

The weather forecast is a prediction of weather after 12-24 hours, and may not reflect current weather conditions.

PRECAUTIONS

This product is engineered to give you years of satisfactory service if you handle it carefully. Here are a few precautions:
1. Do not immerse the unit in water.
2. Do not clean the unit with abrasive or corrosive materials. They may scratch the plastic parts and corrode the electronic circuit.
3. Do not subject the unit to excessive force, shock, dust, temperature or humidity, which may result in malfunction, shorter electronic life span, damaged battery and distorted parts.

4. Do not tamper with the unit's internal components. Doing so will invalidate the warranty on the unit and may cause unnecessary damage. The unit contains no user-serviceable parts.

5. Only use fresh batteries as specified in the user's manual. Do not mix new and old batteries as the old ones may leak.

6. Always read the user's manual thoroughly before operating the unit.

DISCLAIMER

- The content of this manual is subject to change without further notice.
- Due to printing limitation, the displays shown in this manual may differ from the actual display.
- The contents of this manual may not be reproduced without the permission of the manufacturer.

Appendix

City Codes

US and Canadian Cities

City	Code	Zone Offset	DST	City	Code	Zone Offset	DST
Atlanta, Ga.	ATL	-5	SU	Memphis, Tenn.	MEM	-6	SU
Austin, Tex.	AUS	-6	SU	Miami, Fla.	MIA	-5	SU
Baltimore, Md.	BWI	-5	SU	Milwaukee, Wis.	MKE	-6	SU
Birmingham, Ala.	BHM	-6	SU	Minneapolis, Minn.	MSP	-6	SU
Boston, Mass.	BOS	-5	SU	Montreal, Que., Can.	YMX	-5	SU
Calgary, Alba., Can.	YYC	-7	SU	Nashville, Tenn.	BNA	-6	SU
Chicago, IL	CGX	-6	SU	New Orleans, La.	MSY	-6	SU
Cincinnati, Ohio	CVG	-5	SU	New York, N.Y.	NYC	-5	SU
Cleveland, Ohio	CLE	-5	SU	Oklahoma City, Okla.	OKC	-6	SU
Columbus, Ohio	CMH	-5	SU	Omaha, Neb.	OMA	-6	SU
Dallas, Tex.	DAL	-6	SU	Ottawa, Ont., Can.	YOW	-5	SU
Denver, Colo.	DEN	-7	SU	Philadelphia, Pa.	PHL	-5	SU
Detroit, Mich.	DTW	-5	SU	Phoenix, Ariz.	PHX	-7	NO
El Paso, Tex.	ELP	-7	SU	Pittsburgh, Pa.	PIT	-5	SU
Houston, Tex.	HOU	-6	SU	Portland, Ore.	PDX	-8	SU
Indianapolis, Ind.	IND	-5	NO	San Antonio, Tex.	SAT	-6	SU
Jacksonville, Fla.	JAX	-5	SU	San Diego, Calif.	SAN	-8	SU
Las Vegas, Nev.	LAS	-8	SU	San Francisco, Calif.	SFO	-8	SU
Los Angeles, Calif.	LAX	-8	SU	San Jose, Calif.	SJC	-8	SU

City	Code	Zone Offset	DST
Seattle, Wash.	SEA	-8	SU
St. Louis, Mo.	STL	-6	SU
Tampa, Fla.	TPA	-5	SU
Toronto, Ont., Can.	YTZ	-5	SU

City	Code	Zone Offset	DST
Vancouver, B.C., Can.	YVR	-8	SU
Washington, D.C.	DCA	-5	SU
Vancouver, Canada	VAC	-8	SU

World Cities

City	Code	Time Zone	DST	City	Code	Time Zone	DST
Addis Ababa, Ethiopia	ADD	3	NO	Cairo, Egypt	CAI	2	sg
Adelaide, Australia	ADL	9.5	SA	Calcutta, India (as Kolkata)	CCU	5.5	NO
Algiers, Algeria	ALG	1	NO	Cape Town, South Africa	CPT	2	NO
Amsterdam, Netherlands	AMS	1	SE	Caracas, Venezuela	CCS	-4	NO
Ankara, Turkey	AKR	2	SE	Chihuahua, Mexico	CUU	-6	SU
Asunción, Paraguay	ASU	-3	sp	Copenhagen, Denmark	CPH	1	SE
Athens, Greece	ATH	2	SE	Córdoba, Argentina	COR	-3	NO
Bangkok, Thailand	BKK	7	NO	Dakar, Senegal	DKR	0	NO
Barcelona, Spain	BCN	1	SE	Dublin, Ireland	DUB	0	SE
Beijing, China	BEJ	8	NO	Durban, South Africa	DUR	2	NO
Belgrade, Yugoslavia	BEG	1	SE	Frankfurt, Germany	FRA	1	SE
Berlin, Germany	BER	1	SE	Glasgow, Scotland	GLA	0	SE
Birmingham, England	BHX	0	SE	Guatemala City, Guatemala	GUA	-6	NO
Bogotá, Colombia	BOG	-5	NO	Hamburg, Germany	HAM	1	SE
Bordeaux, France	BOD	1	SE	Havana, Cuba	HAV	-5	SH
Bremen, Germany	BRE	1	SE	Helsinki, Finland	HEL	2	SE
Brisbane, Australia	BNE	10	NO	Hong Kong, China	HKG	8	NO
Brussels, Belgium	BRU	1	SE	Irkutsk, Russia	IKT	8	SK
Bucharest, Romania	BBU	2	SE	Jakarta, Indonesia	JKT	7	NO
Budapest, Hungary	BUD	1	SE	Johannesburg, South Africa	JNB	2	NO
Buenos Aires, Argentina	BUA	-3	NO	Kingston, Jamaica	KIN	-5	NO
City	Code	Time	DST	City	Code	Time	DST

		Zone				Zone	
Kinshasa, Congo	FIH	1	NO	Oslo, Norway	OSL	1	SE
Kuala Lumpur, Malaysia	KUL	8	NO	Panama City, Panama	PTY	-5	NO
La Paz, Bolivia	LPB	-4	NO	Paris, France	PAR	1	SE
Lima, Peru	LIM	-5	NO	Perth, Australia	PER	8	NO
Lisbon, Portugal	LIS	0	SE	Prague, Czech Republic	PRG	1	SE
Liverpool, England	LPL	0	SE	Rangoon, Myanmar	RGN	6.5	NO
London, England	LON	0	SE	Reykjavík, Iceland	RKV	0	NO
Lyon, France	LYO	1	SE	Rio de Janeiro, Brazil	RIO	-3	sb
Madrid, Spain	MAD	1	SE	Rome, Italy	ROM	1	SE
Manila, Philippines	MNL	8	NO	Salvador, Brazil	SSA	-3	NO
Marseille, France	MRS	1	SE	Santiago, Chile	SCL	-4	sc
Melbourne, Australia	MEL	10	SA	São Paulo, Brazil	SPL	-3	sb
Mexico City, Mexico	MEX	-6	SU	Shanghai, China	SHA	8	NO
Milan, Italy	MIL	1	SE	Singapore, Singapore	SIN	8	NO
Montevideo, Uruguay	MVD	-3	SM	Sofia, Bulgaria	SOF	2	SE
Moscow, Russia	MOW	3	SK	Stockholm Arlanda, Sweden	ARN	1	SE
Munich, Germany	MUC	1	SE	Sydney, Australia	SYD	10	SA
Nairobi, Kenya	NBO	3	NO	Tokyo, Japan	TKO	9	NO
Nanjing (Nanking), China	NKG	8	NO	Tripoli, Libya	TRP	2	NO
Naples, Italy	NAP	1	SE	Vienna, Austria	VIE	1	SE
New Delhi, India	DEL	5.5	NO	Warsaw, Poland	WAW	1	SE
Odessa, Ukraine	ODS	2	SE	Zürich, Switzerland	ZRH	1	SE
Osaka, Japan	KIX	9	NO				

DST definition

SA = Australian DST.

SB = South Brazilian DST.   Changes annually.

SC = Chile DST

SE = Standard European DST.

SG = Egypt DST

SH = Havana, Cuba DST

SI = Iraq and Syria DST

SK = Irkutsk & Moscow DST

SM = Montevideo, Uruguay DST

SN = Namibia DST

SP = Paraguay DST

SQ = Iran DST maybe changed annually.

ST = Tasmania DST

SU = Standard American DST.

SZ = New Zealand DST

NO DST = no = Places that do not observe DST

ON = Always add 1 hour with local standard time

Technical Specifications

Weather Station Receivers

Receiver (Supply=6.0V, Ta=23°C) and Sensor unit (Supply=3.0V, Ta=23°C)

RF Transmission Frequency	868 MHz

RF Reception Range
Thermo-hygro Sensor	50 meters maximum (Line of Sight)
Wind Sensor, Rain Sensor	50 meters maximum (Line of Sight)

Barometric Pressure Range	500 hpa to 1100hpa
(At sea level)	(374.5 mmHg to 823.8 mmHg)
Altitude Compensation Range	-200m to +5000 m (-657 ft to 16404 ft)
Barometric Pressure resolution	0.1 hpa (0.003 inHg, 0.08 mmHg)
Barometric Pressure accuracy	+/- 5 hpa (0.015 inHg, 0.38 mmHg)
Outdoor Temperature Display Range	-40°C to 80°C (-40°F to 176°F)
Indoor Temperature Display Range	-9.9°C to 60°C (14.2°F to 140°F)
Operating Temperature	-5°C to 50°C (23°F to 122°F)
Storage Temperature	-20°C to 70°C(-4°F to 158°F)
Temperature accuracy	+/- 1°C or +/- 2°F
Temperature resolution	0.1°C or 0.2°F
Humidity Display Range	0% to 99%
Humidity accuracy	+/-5% (within 25% - 80%)
Humidity resolution	1%

Receiving Cycle
Remote Thermo./Hygro.	around 47s
Rain gauge	183s
Wind sensor	33s

Sunrise and Sunset Accuracy	+/- 1min (latitude within +/- 50°)
Wind Direction Range	16 positions
Wind Direction Accuracy	+/-11.25°
Wind Direction Resolution	22.5°
Wind Direction Starting Threshold	3mph
Wind Speed Range	0 to 199.9mph

Wind Speed Accuracy	+/- (2mph + 5%)
Wind Speed Starting Threshold	3mph
Wind/Gust Speed Disply Update Interval	33 seconds
Wind/Gust Sampling Interval	11 seconds
1h/24h/yesterday Rainfall Range	0.0 to 1999.9 mm (78.73 inch)
Last week/ last month Rainfall Range	0 to 19999 mm (787.3 inch)
Temperature Sensing Cycle (indoor)	10s
Humidity Sensing Cycle (indoor)	10s

Power

Main unit	AC/DC adaptor 5V
Remote Thermo.-Hygro unit	use 2 pcs UM-3 or "AA" 1.5V battery
Remote Anemometer unit	use 2 pcs UM-3 or "AA" 1.5V battery
Remote Rain gauge unit	use 2 pcs UM-3 or "AA" 1.5V battery

Weight

Main unit : 298g (with build-in battery)

Remote Thermo.-Hygro unit	43g (without battery)
Remote Anemometer unit	315g (without battery)
Remote Rain gauge unit	290g (without battery)

Dimension

Main unit	185(L) x 140(H) x 12(D) mm
Remote Thermo.-Hygro unit	37.5(L) x 110(H) x 23(D) mm
Remote Anemometer unit	405(L) x 375(H) x 160(D) mm
Remote Rain gauge unit	163(L) x 177(H) x 119(D) mm