## OWNERS MANUAL

Congratulations on your purchase of this weather station, WS295. Please take the time to read and understand this manual so you can begin to enjoy the convenience and features this product has to offer.

The WS295 is a weather station device that has several weather related functions. The main features are:

Main Display Unit:
* Perpetual Calendar
* Local temperature and humidity display
* Pressure reading display
  Receives and monitors temperature and humidity from up to 3 remote sensors via RF technology of
* 433MHz
* Maximum/minimum temperature records
* Temperature and humidity trend indicator
* Pressure historical bar graph
* Temperature alarm (local and remote)
* Animated weather forecast symbols
* Moon phase symbols
* User-selectable C or F
  Battery: 2 x AA size

Remote Sensor WT460H:
* drip-proof design with LCD
* temperature display in user-selectable C or F
* humidity display
* transmission range: up to 40 meters in open area
* battery type: 2 x AA size

WS295 receiver

WT460H transmitter
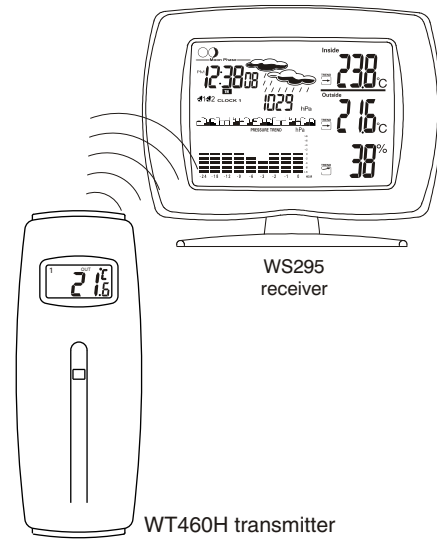
## GETTING STARTED — button placement

**1** SNOOZE/MODE: scrolls through Clock 1 & 2, Alarm 1 & 2, Date & Year, and Temperature Alarm(high & low) mode; snooze for alarm

**2** HOUR/+/MAX: shows maximum temperature; adjusts clock, alarm, date & year and temperature alarm values

**3** MINUTE/-/MIN: shows minimum temperature; adjusts clock, alarm, date & year and temperature alarm values

**4** ALARM/(C/F): toggles between C and F, 12 and 24 hour format, Alarm 1 & 2 on and off; disables (resets) high & low temperature alarms

**5** CHN: scrolls through remote channels (1 to 3); scrolls through local and remote channels (1 to 3) in (high & low) temperature alarm mode; activate learn process

**6** Table Stand

**7** SET: enter to House code and Channel setting mode

**8** C/F: change between C or F, change channel and house code

**9** Battery compartment

**10** LCD display

**11** Wall Mount Holder & Table Stand

## GETTING STARTED — battery installation

**1** remove battery cover
**2** 2 AA size batteries (WS295)
**3** 2 AA size batteries (WT460H) (included)
**4** Insert between terminals observing proper polarity then replace cover
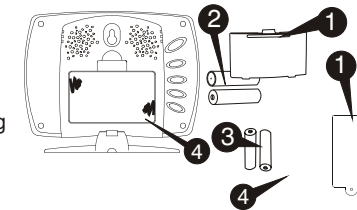
LOW BATTERY INDICATION:

Receiver: Low battery indicator will display continuously when batteries need replacing. On transmitter, ▯ will be displayed

### setting remote transmitters

**1** Insert batteries to start setup
**2** HOUSE CODE will flash for 8 seconds
**3** Select HOUSE CODE (1-15) by pressing C/F
**4** Transmitters for each receiver must be set to the same HOUSE CODE and pressing SET CHANNEL will flash for 8 seconds
**5** Select CHANNEL (1-3) by pressing C/F and pressing SET
**6** Humidity & Temperature will display
**7** Select C or F of Temperature by pressing C/F and pressing SET

\* Use a different house code if your weather station detects other signals from neighboring sources
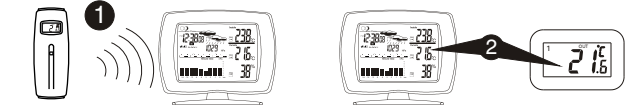\* Factory default: house code = 01 and channel = 01
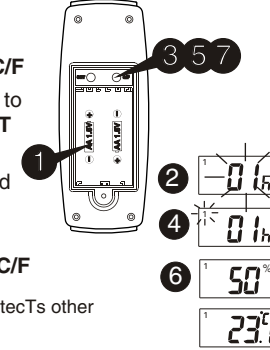
## SETUP — Synchronization

### Automatic Learn Function:

**1** Learn function executes automatically and runs for approximately 3 minutes when batteries are first installed in the receiver.

**2** Within these 3 minutes, receiver picks up the temperature & humidity signals from remote sensor and displays the readings.

### Manual-Learn (Searching for Remote Signals):

If a new remote sensor is added or if signal is lost (outdoor display blinking), learn function must be executed again.

**1** Press and hold CHN for 3 seconds to start

**2** Beep sound indicates that learn function has started

**3** 'Outside' symbol will flash and unit will beep as each remote sensor is detected

**4** Temperature & humidity readings of remote sensor displays on the receiver.
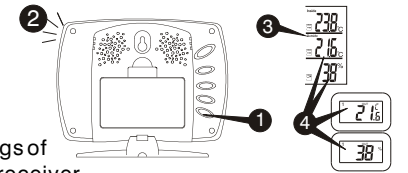
## CLOCK SETTING — Manual clock setting

### Clock 1 Setting:

**i** Press and hold MODE for 3 seconds to enter the clock setting mode (the CLOCK1 symbol appears and the time will flash)

**ii** Press HOUR to set the hour and MINUTE to set the minute;

**iii** Press ALARM/(C/F) during clock setting, to change between 12 and 24 hour display. This also will end clock setting (to clear the second record by pressing CHN key)

**iv** Press MODE or do not press any key for 1 minute to finish clock setting.
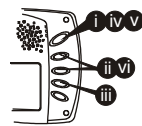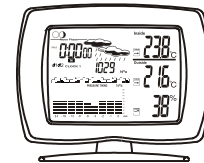
### Clock 2 Setting:

**v** Scroll to Clock 2 mode using MODE

**vi** Press + or - key to change the hour (in one hour increments/decrements relative to Clock 1)
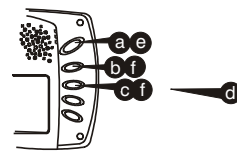
## DATE, YEAR & ALARM SETTING

### Date Setting:

**a** Scroll to date mode using MODE
**b** Press HOUR/+/MAX to set month
**c** Press MINUTE/-/MIN to set date
**d** Weekday is automatically determined from the year/month/day setting

February will have either 28 or 29 days depending on the year setting

### Year Setting

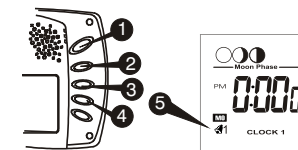**e** Scroll to YEAR mode using MODE
**f** Press + or - key to adjust year

## DATE, YEAR & ALARM SETTING

### Alarm 1 and Alarm 2 Setting

**1** Scroll to Alarm1 mode (Alarm2 mode) using MODE
**2** Press HOUR to set hour
**3** Press MINUTE to set minute
**4** Press ALARM to toggle alarm on and off
**5** When the alarm is set ON, the bell symbol will appear

### When Alarm Sounds

**1** 🔔1 or 🔔2 will flash
**2** Press SNOOZE to snooze the alarm for 5 minutes. After that the alarm will sound again.
**3** Press ANY other key will shut off the alarm. Without interruption, alarm will shut off automatically after one minute.
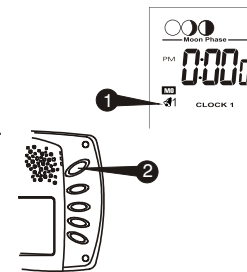
## MOON PHASE

The moon phase is automatically updated according to the year/month/day.

### Moon Phase Display

**1** New Moon
**2** Young Crescent
**3** First Quarter
**4** Waxing Gibbous
**5** Full Moon
**6** Waning Gibbous
**7** Last Quarter
**8** Old Crescent

## TEMPERATURE & HUMIDITY DISPLAY

### *Check Local Temperature & Humidity*

✱ After insert batteries, local temperature and humidity readings will *alternate* display.

### *Check Remote Temperature & Humidity*

A Press **CHN** to toggle between Channel 1, 2 and 3. Temperature and humidity readings will *alternate* display on the receiver.

### *C or F Temperature Display*

B Toggle between C and F by pressing **C/F** at Clock2 mode.

### *Min and Max Temperature & Humidity*

C Press **MIN** in Clock1 mode to display minimum temperature and humidity

D Press **MAX** in Clock1 mode to display maximum temperature and humidity
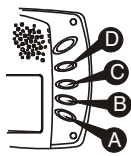
*Note:*
Min/Max readings are automatically cleared daily at **00:00**

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## Temperature & humidity trend

The trend indicator shows the trend of temperature & humidity determined by the particular sensor in the past half hour interval.

| Arrow Indicator | | | |
|---|---|---|---|
| Trend | Rising | Steady | Falling |

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## TEMPERATURE ALARM

You can set high temperature or low temperature alarms for one local and one for one remote channel

### Local temperature alarm

1 Scroll to local temperature alarm mode by using **MODE**
2 The default value 14C or existing preset will flash
3 Press + or - key to set the temperature limit value
4 Press **ALARM** key continuously to scroll and select the high temperature alarm, low temperature alarm or disable the alarm function
5 Press **MODE** to finish
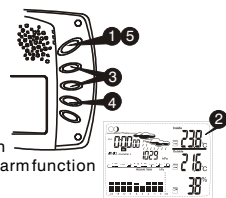
### Remote temperature alarm

1 Scroll to remote channel temperature alarm mode by using **MODE**
2 The default value 14C or existing preset will flash
3 Press + or - key to set the temperature limit value
4 Press **ALARM** key continuously to scroll and select the high temperature alarm, low temperature alarm or disable the alarm function
5 Press **CHANNEL** to select one desired channel of transmitter
6 Press **MODE** to finish
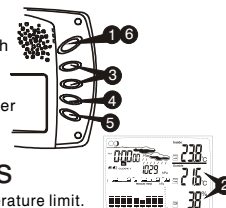
### when temperature alarm sounds

✱ It is to alert that the temperature has exceeded the preset temperature limit.
a Press any key to stop temperature alarm; or
b If no key is pressed, the temperature alarm will automatically stop itself after one minute.
c Once triggered, temperature alarm comes on as a distinctive sound, different to that of Alarm1 and Alarm2.

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## WEATHER DISPLAY

animated weather forecast symbols

This weather station is capable of detecting barometric pressure changes, and based on the data collected, can predict the weather for the next 12 to 24 hours. The effective range covers an area of 30 ~50km.

| Sunny | Cloudy | Raining | Snowing | Freeze Warning | Storm Alert |
|---|---|---|---|---|---|
| OR | OR | | | <flashing snow> | |

### Storm Alert
* Storm symbol will flash to warn of thunderstorm.

### About Freeze Warning
* Snow symbol will flash to warn of 'freezing'.
* Activated when Channel 1's temperature is between -1.9C and +2.9C
* Snow will appear solid if and when Channel 1's temperature falls below -1.9 C.

### Note:
* Remote sensor Channel 1 will be used for weather indication.

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## WEATHER DISPLAY

### REMARKS:

* After setting up, reading for weather forecasts should be discarded for the next 12-24 hours. This will allow sufficient time for the Weather Station to operate at a constant altitude and therefore result in a more accurate forecast.
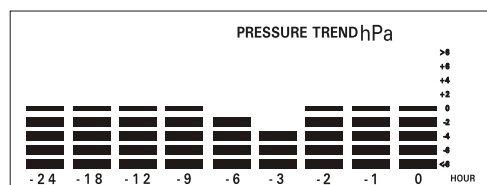
* Common to weather forecasting, absolute accuracy cannot be guaranteed. The weather forecasting feature is estimated to have an accuracy level of about 75% due to the varying areas the Weather Station has been designed for use in.

* If the Weather Station is moved to another location significantly higher or lower than its initial standing point (e.g from ground floor to 1st floor of a house), remove the batteries and reinsert them after about 30 seconds. By doing this, the Weather Station will not make mistake of new location being a possible change in air pressure. Again, discard the weather forecasts for the next 12-24 hours as this allow time for operation at a constant altitude.

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## PRESSURE HISTORICAL BAR GRAPH

The bar graph lets you see the pressure trend over a period of 24 hours in 3-hour intervals.

PRESSURE TREND hPa

-24  -18  -12  -9  -6  -3  -2  -1  0   HOUR

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## TROUBLESHOOTING

### problem

i Cannot receive radio control DCF-77 signals to update the clock.

ii The temperature measurement of remote sensor and receiver does not match.

iii Temperature reading of outdoor remote sensor seems to high.

iv Receiver is no longer receiving remote sensor signals or display

### solution

i Place the clock away from metal objects or electrical appliances such as TVs, computers, monitors, etc.

ii Wait for about 1-2 minute to ensure the remote sensor and receiver are in phase. Otherwise, re-synchronize receiver by holding **CHN** for 3 seconds until a beep is heard.

iii Ensure the remote sensor is out of direct sunlight, and away from sources of heat.

iv - Repeat the learning procedures.
- Temperature may be below -30C.
- Batteries in remote sensor may need changing.
- Move remote sensor closer to the receiver.
- Make sure remote sensor is away from sources of electrical disturbance.

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## SPECIFICATIONS

**Weather Station Receiver WS295**

Battery Type: 2 X 1.5V AA batteries
Temp. Range: 0°C to +55°C
Humidity Range: 20% to 90% RH
Measurement Accuracy: Max. +/- 1°C within measuring range of 0 to 40°C
Resolution: 0.1°C

**Weather Station Transmitter WT460H**

Battery Type:            2 X 1.5V AA batteries
Temp. Range:            -25°C to +55°C
Humidity Range:          20% to 90%
Transmission Frequency:  433.92 MHz
Transmission Range:      up to 40 meters in open area

**INSTRUCTION TO THE USER**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules.  These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.  However, there is no guarantee that interference will not occur in a particular installation.  If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.  The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.