OWNERS MANUAL

Congratulations on your purchase of this weather station, WS738. 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.

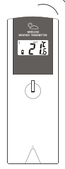
The WS738 is a weather station device that has several weather related functions. The main features are:

Main Display Unit:
* Auto synchronizing radio controlled clock (DCF-77)
* Perpertual Calendar
* Local temperature and humidity display
* Receives and monitors temperature and humidity from up to 4 remote sensors via RF technology of 433MHz
* Maximum/minimum temperature records
* Temperature and humidity trend indicator
* Temperature history chart
* Temperature alarm (for local and one out channel)
* Weather forecast display
* Moon phase symbols
* Sunrise/ Sunset time display
* Backlight
* User-selectable C or F
* Battery: 2 x AA size

Remote Sensor WT440H:
* Splash proof design with LCD
* Temperature display in user-selectable C or F
* Humidity display
* Transmission range: up to 40 meters
* Battery: 2 x AA size

WS738
Wireless Weather Station
with weather forecast

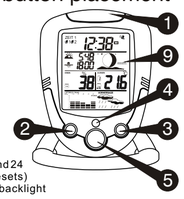
WS738
receiver



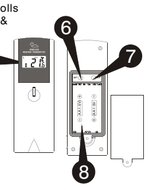
WT440H
remote sensor

GETTING STARTED

button placement

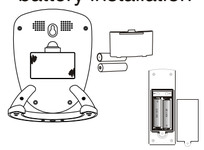


1. **SNOOZE/MODE:** scrolls through Clock 1 & 2, Alarm 1 & 2, Date & Year, and Temperature Alarm (high & low) mode; snooze for alarm
2. **HOUR/+/MAX:** shows maximum temperature; adjusts clock, alarm, date & year and temperature alarm values
3. **MINUTE/-/MIN:** shows minimum temperature; adjusts clock, 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; disable/enable backlight
5. **CHN:** scrolls through remote channels (1 to 4); scrolls through local and remote channels (1 to 4) in (high & low) temperature alarm mode; set sunrise/sunset zone; activate learn process
6. **SET:** enter into setting mode and confirm the values during setting.
7. **C/F:** change value of channel and house code during setting. Select between C or F.
8. Battery compartment
9. LCD display



GETTING STARTED

battery installation



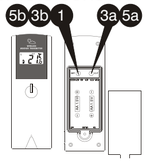
1. remove battery cover
2. 2 AA size batteries (WS738)
3. 2 AA size batteries (WT440H) (included)
4. Insert between terminals observing proper polarity then replace cover

LOW BATTERY INDICATION:

Receiver: Low battery indicator will display continuously when batteries need replacing

Remote sensor: Low battery indicator will appear on sensor's LCD along with a low battery indication next to the corresponding channel on the receiver's LCD

setting remote sensors



1. Press **SET** to start
2. House code will flash for 10 seconds
3. Select house code (1-15) by pressing **C/F** key. Press **SET** to confirm.
   Remote sensors for each receiver must be set to the same house code.
4. Channel will flash for 10 seconds
5. Select channel(1-4) by pressing C/F key. Press SET to confirm.

*Use a different house code if your weather station detects othersignals from neighbouring sources

* Factory default: house code = 01 and channel = 01

SETUP

Synchronization

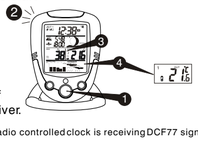
Automatic Learn Function:

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. 'Channel' symbol will flash and unit will beep as each remote sensor is detected
4. Temperature & humidity readings of remote sensor displays on the receiver.



* Auto/Manual Learn will not operate while the radio controlled clock is receiving DCF77 signals

CLOCK SETTING

Radio Control Clock

1. The Ws738 is designed to automatically synchronize its calendar clock once it is brought within range of 1500km of the Frankfurt DCF77 radio signal. When the WS738 is within this range, its radio-control mechanism will override all manual settings.
2. When receiving radio signal, the Radio Tower symbol starts to blink. A complete reception generally takes several minutes, depending on the strength of the radio signal.
3. When the reception is complete, the Radio Tower symbol will stop blinking and remain solid.
4. For better reception, place the clock away from metal objects and electrical appliances (i.e. television, computer, monitor, etc.) to minimize interference.

manual clock setting

Clock 1 Setting:

i. Press and hold **MODE** for 3 seconds to enter the clock setting mode (the CLOCK 1 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.
iv. Press **MODE** or do not press any key for 1 minute to finish clock setting.

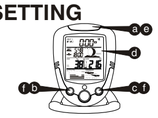
Clock 2 Setting:

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

DST Setting

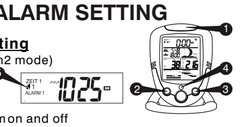
User can manually select DST (daylight saving time) feature when DCF is failed to receive

1. Scroll to Year mode using **MODE**
2. Press **ALARM** manually to enable and disable DST
3. When DST is set ON, the **DST** symbol will appear

Note:
* It is not recommended unless DCF is failed to synchronize
* It is recommended to change the year/month/day information accordingly

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

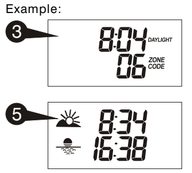
1. 1 or 2 will flash
2. Press **SNOOZE** to snooze the alarm for 8 minutes. After that the alarm will sound again.
3. Press ANY other key will shut off the alarm. Without interruption, alarm will shut off automatically after one minute.

SUNRISE/ SUNSET TIME DISPLAY

This weather station has state-of-art feature of Sunrise/ Sunset time display. The Sunrise/ Sunset time will display corresponding to your selected location. Please follow the procedures as below:

1. Enter into clock setting mode (Press and hold **MODE** for 3 seconds to enter the clock setting mode)
2. Identify which zone you are located at (see the zone map at last page)
3. Set the Zone code with CHN key
4. Daytime duration will change according to selected zone code and date.
5. Sunrise and Sunset times follows to date.

Example:



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 & humidity will display in alternate pattern.

Check Remote Temperature & Humidity

Ⓐ Press **CHN** to toggle between Channel 1, 2, 3 and 4. Temperature and humidity readings will *alternate* on the receiver.

C or F Temperature Display

Ⓑ Toggle between C and F by pressing **C/F** in either Clock1 or Clock2 mode.

Min and Max Temperature & Humidity

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

Ⓓ Press **MAX** in Clock1 mode to display maximum temperature and humidity

Note:
Min/Max readings are automatically cleared daily at **00:00**

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

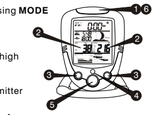
TEMPERATURE ALARM

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

Outdoor 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.

WEATHER DISPLAY

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				<flashing snow>	<flashing>

Storm Alert

* Storm symbol will flash to warn of thunderstorm.
* It is activated when pressure falls/rises and temperature plunges.

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:

* Sun / Moon symbol display according to sunset/sunrise time.
* Initially, the weather will be cloudy
* Remote sensor Channel 1 will be used for weather indication.

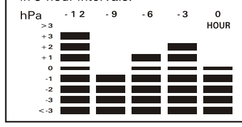
WEATHER DISPLAY

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.

PRESSURE HISTORICAL BARGRAPH

The bar graph lets you see the pressure trend over a period of 12 hours in 3-hour intervals.



BACKLIGHT

This Weather Station is equipped with Backlight function.
Pressing any key will turn on the backlight function.
To save energy, you can select to Turn Off the backlight by executing the following steps:

Turn Off Backlight

Steps
1. Use **MODE** key scrolling to Date display
2. Press **ALARM** key

Afterwards, the backlight will not be activated even if pressing any key

Reactivate Backlight

Repeat the above same steps to reactivate the backlight function. Afterwards, pressing any key will turn on the backlight

TROUBLESHOOTING

problem	solution
i Cannot receive radio control DCF-77 signals to update the clock.	i Place the clock away from metal objects or electrical appliances such as TVs, computers, monitors, etc.
ii The temperature measurement of remote sensor and receiver does not match.	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 Temperature reading of outdoor remote sensor seems to high.	iii Ensure the remote sensor is out of direct sunlight, and away from sources of heat.
iv Receiver is no longer receiving remote sensor signals or display	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.

SPECIFICATIONS

Weather Station Receiver WS738

Battery Type: 2 X 1.5V AA batteries
Operation Temp: -5°C to +50°C

Temp. Range: -9.9°C to +55°C
Measurement Accuracy: Max. +/- 1°C within measuring range of 0 to 40°C
Resolution: 0.1°C
Humidity Range: 25% to 90% RH

Weather Station Transmitter WT440H

Battery Type: 2 X 1.5V AA batteries
Operation Temp.: -20°C to +60°C
Temp. Range: -30°C to +70°C
Temperature Resolution: 0.1°C for above -10°C / 1°C for below -10°C
Measurement Accuracy: Max. +/- 1°C within measuring range of 0 to 40°C
Humidity Range: 25% to 90% RH
Transmission Frequency: 433.92 MHz
Transmission Range: 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.