WIRELESS 868 MHz WEATHER STATION

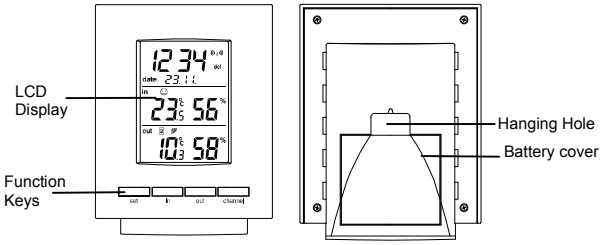
Instruction Manual

INTRODUCTION:

Congratulations on purchasing this Weather Station with wireless 868MHz transmission of outdoor temperature and humidity and display of indoor temperature and humidity. It is further featuring a DCF-77 radio controlled clock with date display. With four easy to use function keys, this innovative product is ideal for use in the home or office.

FEATURES:

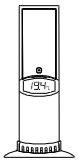
The Weather Station



- DCF-77 Radio Controlled Clock with manual setting option
- Time reception ON/OFF setting
- 12/24 hour display
- Hour and minute display, seconds indicated by flashing dot
- Time zone option ±12 hours
- Date with month calendar display
- Temperature display in degrees Celsius (°C) or Fahrenheit (°F) selectable
- Indoor and outdoor temperature display with MIN/MAX recording

- Indoor and outdoor humidity display as RH% with MIN/MAX recording
- Indoor comfort level indicator- happy or sad face icons
- MIN/MAX recordings for indoor and outdoor temperature show date and time received and can be reset
- Can take up to three outdoor transmitters
- Wireless transmission at 868 MHz
- Signal reception intervals at 4 seconds
- Table standing or wall mounting
- Low battery indicator

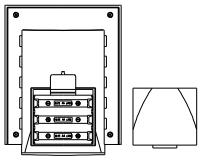
The Outdoor Transmitter



- Remote transmission of outdoor temperature and humidity to Weather Station by 868MHz
- Shower proof casing
- Wall mounting case
- Mounting at a sheltered place. Avoid direct rain and sunshine

HOW TO INSTALL AND REPLACE BATTERIES IN THE WEATHER STATION

The Weather station uses 3 x AA, IEC LR6, 1.5V batteries. When batteries will need to be replaced, the battery symbol will appear on the LCD. To install and replace the batteries, please follow the steps below:

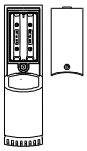


1. Insert finger or other solid object in the space at the top center of the battery compartment and lift up to remove the cover.
2. Insert batteries observing the correct polarity (see marking).
3. Replace compartment cover.

HOW TO INSTALL AND REPLACE BATTERIES IN THE OUTDOOR TRANSMITTER

The outdoor transmitter uses 2 x AA, IEC LR6, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Remove the battery cover.



2. Insert the batteries, observing the correct polarity (see marking).
3. Replace the battery cover on the unit.

Note:
In the event of changing batteries in any of the units, all units need to be reset by following the setting up procedures. This is because a random security code is assigned by the transmitter at start-up and this code must be received and stored by the Weather station in the first 3 minutes of power being supplied to it

BATTERY CHANGE:

It is recommended to replace the batteries in all units on an annual basis to ensure optimum accuracy of these units.

Please participate in the preservation of the environment. Return used batteries to an authorised depot.

SETTING UP:

WHEN ONE TRANSMITTER IS USED

1. First, insert the batteries in the transmitter (see "**How to install and replace batteries in the Termo-hygro outdoor transmitter**" above).
2. Within 2 minutes of powering up the transmitter, insert the batteries in the Temperature Station (see "**How to install and replace batteries in the Weather Station**" above). Once the batteries are in place, all segments of the LCD will light up briefly. Following the indoor temperature/humidity and the time as 0:00 will be displayed. If these information are not displayed on the LCD after 60 seconds, remove the batteries and wait for at least 60 seconds before reinserting them. Once the indoor data is displayed user may proceed to the next step.
3. After the batteries are inserted, the Weather station will start receiving data signal from the transmitter. The outdoor temperature and humidity data should then be displayed on the Weather station. If this does not happen after 2 minutes, the batteries will need to be removed from both units and reset from step 1.
4. In order to ensure sufficient 868 MHz transmission however, the distance between the Weather Station and the transmitter should

not be more than 100 meters (see notes on “**Positioning” and “868 MHz Reception**”).

Note: In the event of changing batteries of the units, ensure the batteries do not spring free from the contacts. Always wait at least 1 minute after removing the batteries before reinserting, otherwise start up and transmission problems may occur.

WHEN MORE THAN ONE TRANSMITTER IS USED

1. User shall remove all the batteries from the Weather Station and transmitters, and wait 60 seconds.
2. Insert the batteries in the first transmitter.
3. Within 2 minutes of powering up the first transmitter, insert the batteries in the Weather Station. Once the batteries are in place, all segments of the LCD will light up briefly. Following the indoor temperature/humidity and the time as 0:00 will be displayed. If these information are not displayed on the LCD after 60 seconds, remove the batteries from both units and wait for at least 60 seconds before reinserting them.
4. The outdoor temperature and humidity data from the first transmitter (channel 1) should then be displayed on the Weather Station. Also, the signal reception icon will be displayed. If this does not happen after 2 minutes, the batteries will need to be removed from both units and reset from step 1.
5. Insert the batteries in the second transmitter as soon as the outdoor temperature and humidity readings from the first transmitter are displayed on the Weather Station.
   Note : User shall insert the batteries into the second transmitter within 45 seconds after the Weather Station displays the information of the first transmitter.
6. The outdoor temperature and humidity from the second transmitter and the "channel 2" icon should then be displayed on the Weather Station. If this does not happen after 2 minutes, the batteries will need to be removed from all the units and reset from step 1.
7. Insert the batteries in the third transmitter as soon as the "channel 2" icon and outdoor data are displayed on the Weather Station. Then within 2 minutes, the channel 3 outdoor data from the third transmitter will be displayed and the channel icon will shift back to "1" once the third transmitter is successfully received. If this is not happen, user shall restart the setting up from step 1.
   Note : User shall insert the batteries into the third transmitter within

45 seconds after the Weather Station displays the information of the first transmitter. Or immediately after reception of the second transmitter is finished.

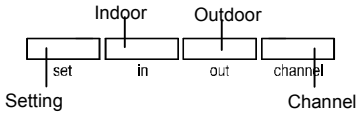
8. In order to ensure sufficient 868 MHz transmission however, the distance between the Weather Station and the transmitter should not be more than 100 meters (see notes on "**Positioning" and "868 MHz Reception**").

IMPORTANT:
Transmission problems will arise if the setting for additional sensors is not followed as described above. Should transmission problems occur, it is necessary to remove the batteries from all units and start again the set-up from step 1.

FUNCTION KEYS:

Weather station:

The weather station has four easy to use function keys:



SET key (Setting):

- Used to enter the set mode for the following functions: LCD contrast, time zone, time reception ON/OFF, 12/24 hour, manual time, year, date, month, snooze, ºC/ºF temperature, weather forecast sensitivity settings

IN key (Indoor)

- Used to toggle between the current/ minimum/ maximum indoor temperature and humidity
- Press for over 3 seconds to reset the indoor maximum and minimum temperature and humidity records (will reset all records to current level)
- Changes the values in manual setting modes
- **Note:** in 24hr time display mode, the day is set by using the IN key. In 12hr time display mode, the month is set by using the IN key

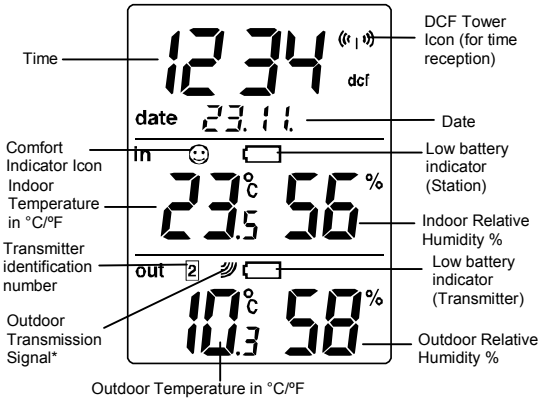
OUT key (Outdoor)

- Used to toggle between the current/ minimum/ maximum outdoor temperature and humidity
- Press for around 3 seconds to reset the outdoor maximum and minimum temperature and humidity records (will reset all records to current level of the relative transmitter being reset- each transmitter's data must be reset separately)
- Changes the minute and month setting when in set mode
- **Note:** in 24hr time display mode, the month is set by using the OUT key. In 12hr time display mode, the day is set by using the OUT key

CHANNEL key

- Used to toggle between the Outdoor Transmitters 1, 2 and 3.
- Used to exit manual setting modes

LCD SCREEN AND SETTINGS:



* When the signal is successfully received by the Weather Station, the outdoor transmission icon will be switched on. (If not successful, the icon will not be shown on LCD). The user can then easily see whether the last reception was successful (icon on) or not (icon off). On the other hand,

the short blinking of the icon shows that a reception is currently taking place.

For better distinctness the LCD screen is split into 3 sections displaying the information for time, date, indoors and outdoors.

RADIO CONTROLLED TIME:

The time base for the radio controlled time is a Cesium Atomic Clock operated by the Physikalisch Technische Bundesanstalt Braunschweig which has a time deviation of less than one second in one million years. The time is coded and transmitted from Mainflingen near Frankfurt via frequency signal DCF-77 (77.5 kHz) and has a transmitting range of approximately 1,500 km. Your radio-controlled Weather Station receives this signal and converts it to show the precise time in summer or wintertime. The quality of the reception depends greatly on the geographic location. In normal cases, there should be no reception problems within a 1,500km radius around Frankfurt.

Once the outdoor data reception completes on the Weather station, the DCF tower icon in the clock display will start flashing in the upper right corner. This indicates that the clock has detected that there is a radio signal present and is trying to receive it. When the time code is received, the DCF tower becomes permanently lit and the time and data will be displayed.

DCF reception is done twice daily at 02:00 and 03:00 am. If the reception is not successful at 03:00 am, then the next reception takes place the next hour and so on until 06:00am, or until the reception is successful. If the reception is not successful at 06:00 am, then the next attempt will take place the next day at 02:00 am.

If the tower icon flashes, but does not set the time or the DCF tower does not appear at all, then please take note of the following:

- Recommended distance to any interfering sources like computer monitors or TV sets is a minimum of 1.5 - 2 metres.
- Within ferro-concrete rooms (basements, superstructures), the received signal is naturally weakened. In extreme cases, please place the unit close to a window and/or point its front or back towards the Frankfurt transmitter.
- During nighttime, the atmospheric disturbances are usually less severe and reception is possible in most cases. A single daily

reception is adequate to keep the accuracy deviation below 1 second.

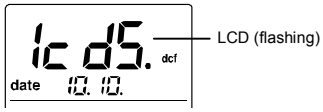
MANUAL SETTINGS

The following manual settings can be changed when pressing the SET key for:

- LCD contrast setting
- Time zone setting
- Time reception ON/OFF setting
- 12/24-Hour setting
- Manual time setting
- Calendar setting
- Snooze setting
- °C/°F setting
- Weather forecasting icon sensitivity setting

LCD CONTRAST SETTING:

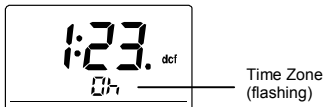
The LCD contrast can be set to 8 different levels (0-7) to suit the users needs (default LCD contrast setting is LCD 5). To set the desired contrast level:



1. Press the IN key to select the level of contrast desired.
2. Press the SET key to confirm and enter the **"Time Zone setting"** or exit the setting mode by pressing the CHANNEL key.

TIME ZONE SETTING:

The time zone default of the Weather station is 0. To re-set the time zone:

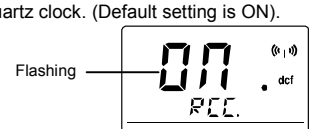


1. Press the SET key after completing the cotrast setting in order to enter the Time Zone setting (flashing).
2. Using the IN key, set the time zone. The range runs from -/+ 12 and then runs from -12 back to +12 in consecutive 1-hour intervals.

3. Press the SET again to confirm and to enter the **"Time Reception ON/OFF setting"** or exit the setting mode by pressing the CHANNEL key.

TIME RECEPTION ON/OFF SETTING

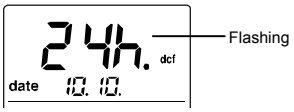
In area where reception of the DCF-77 time is not possible, the DCF-77 time reception function can be turned OFF. The clock will then work as a normal Quartz clock. (Default setting is ON).



1. The digit "ON" will start flashing on the LCD.
2. Use the IN key to turn OFF the time reception function.
3. Confirm with the SET key and enter the **"12/24-Hour Display setting"** or exit the setting mode by pressing the CHANNEL key

Note:
If the Time Reception function is turned OFF manually, the clock will not attempt any reception of the DCF time as long as the Time Reception OFF function is activated. The Time Reception icon will not be displayed on the LCD.

12/24 HOUR TIME DISPLAY SETTING

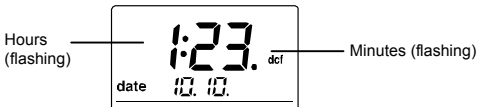


1. After setting time reception ON/OFF, press the SET key, "12h" or "24h" flashes in the LCD.
2. Press the IN key to select the "12h" or "24h" display mode.
3. Press the SET again to confirm and to enter the **"Manual Time setting"** or exit the setting mode by pressing the CHANNEL key

Note:
When 24h mode display is selected, the calendar format will be date and month display.
When 12h mode display is selected, the calendar format will be month and date display.

MANUAL TIME SETTING:

In case the Weather station is unable to detect the DCF-signal (disturbances, transmitting distance, etc.), the time can be manually set. The clock will then work like a normal Quartz clock.

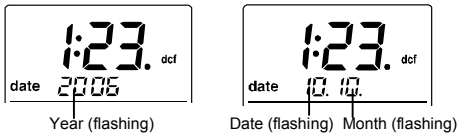


1. Press the SET key until the time display flashes.
2. Use the IN key to set the hours and the OUT key to set the minutes. Pressing these keys continuously moves the hours consecutively by 1 and the minutes consecutively by 5.
3. Press the SET again to confirm and to enter the **"Calendar setting"** or exit the setting mode by pressing the CHANNEL key.

Note:

The unit will still try to receive the signal every despite it being manually set. When it does receive the signal, it will change the manually set time into the received time. During reception attempts the DCF tower icon will flash. If reception has been unsuccessful, then the DCF tower icon will not appear but reception will still be attempted the following day.

CALENDAR SETTING:



The date default of the Weather station is 1. 1 in the year 2006. Once the radio-controlled time signals are received, the date is automatically updated. However. if the signals are not received, you can adjust the date manually. To do this:

1. Press the SET key after entering the manual time setting in order to enter the year setting (flashing). Reset the year by pressing the IN key. The range runs from 2006 to 2039.
2. Press the SET key again to enter the month and date display (flashing).

3. Using the OUT key, set the month required. Using the IN key, set the date required.
4. Press the SET again to confirm and to enter the **"Snooze setting"** or exit the setting mode by pressing the CHANNEL key.

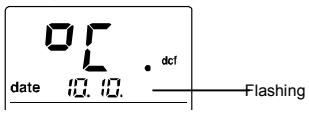
SNOOZE SETTING

Important:

The snooze setting in this Weather Station will not have any effect in this unit performance. This feature is only available in enhance model with alarm function. Simply press the SET key to skip this setting and enter the "°C/°F setting" or exit the setting mode by pressing the CHANNEL key.

°C/°F SETTING:

The default temperature reading is set to °C (degree Celsius). To select °F (degree Fahrenheit):



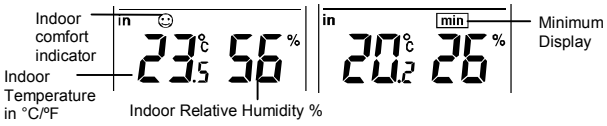
1. The "°C" will be flashing, use the IN key to toggle between "°C" and "°F".
2. Once the desired temperature unit has been chosen, confirm with the SET key and enter the "**Weather Forecast Icon Sensitivity setting**" or exit the setting mode by pressing the CHANNEL key.

WEATHER FORECASTING ICON SENSITIVITY SETTING

Important:

The weather forecast icon sensitivity setting in this Weather Station will not have any effect in this unit performance. This feature is only available in enhance model with weather forecast feature. Simply press the SET key to exit the setting mode.

INDOOR TEMPERATURE AND HUMIDITY READING WITH COMFORT LEVEL INDICATOR:



The indoor temperature and humidity are automatically detected and displayed on the second section of the LCD.

THE COMFORT LEVEL INDICATORS:

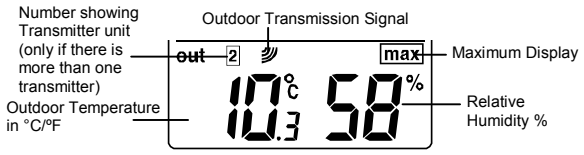
Comfortable: A happy face icon "☺" indicating a temperature level between 20.0°C and 25.9°C and humidity between 45% and 65%.

Uncomfortable: A sad face icon "☹" indicating any value outside the comfortable range.

TOGGLING AND RESETTING THE INDOOR RECORDINGS:

1. To toggle between the indoor current, minimum and maximum temperature and humidity data and the times at which minimum/maximum temperatures were recorded, press the IN key:
   Once to show the minimum temperature and humidity values with time and date recorded for minimum temperature
   Twice to show the maximum temperature and humidity values with time and date recorded for maximum temperature
   Three times to return to the current time, date, temperature and humidity levels
2. To reset the minimum and maximum temperature and humidity data and the times at which minimum/maximum temperatures were recorded, press the IN key continuously for about 3 seconds. This will reset all minimum and maximum data recorded to the current time, date, temperature and humidity. The current time taken is the normal displayed time and does not regard the time zone set for the unit.

OUTDOOR DATA:



The last LCD section shows the outdoor temperature and humidity, a transmission signal and a transmitter number will also show if more than one transmitter has been used.

TOGGLING AND RESETTING THE OUTDOOR RECORDINGS:

1. To toggle between the outdoor current, minimum and maximum temperature and humidity data and the times at which minimum/maximum temperatures were recorded, press the OUT key:
   Once to show the minimum temperature and humidity values with time and date recorded for minimum temperature
   Twice to show the maximum temperature and humidity values with time and date recorded for maximum temperature
   Three times to return to the current time, date, temperature and humidity levels
2. To toggle between transmitters, press the CHANNEL key:
   Once to show transmitter 2
   Twice to show transmitter 3
   Three times to return to transmitter 1

Note: ***The transmitter number will only be displayed if there is more than one transmitter detected.***

3. To reset the minimum and maximum temperature and humidity data, and the times at which minimum/maximum temperature were recorded, press the OUT key continuously for about 3 seconds. This will reset all minimum and maximum data recorded to the current time, date, temperature and humidity. The current time taken is the normal displayed time and does not regard the time zone set for the unit.

TO VIEW THE MIN/MAX DATA FROM DIFFERENT TRANSMITTERS

When more than 1 transmitter used:

1. To toggle between transmitters, press the CHANNEL key:
   Once to show transmitter 2
   Twice to show transmitter 3
   Three times to return to transmitter 1
2. Use OUT key to view the MIN/MAX temperature and humidity data for the selected transmitter.
3. To reset the minimum and maximum temperature and humidity data, and the times at which they were recorded, press the SET key continuously for about 3 seconds. This will reset the MIN/MAX data recorded to the current time, date, temperature and humidity. The

current time taken is the normal displayed time and does not regard the time zone set for the unit.

Note: the MIN/MAX data for each transmitter needs to be reset separately.

LOW BATTERY INDICATOR

Low battery indicator is displayed on the LCD when the batteries require changing.

OUTDOOR TRANSMITTER:

The temperature and humidity are measured and transmitted every 4 seconds.

The temperature may affect the range of the Outdoor Transmitter. At cold temperatures the transmitting distance may be decreased. Please bear this in mind when placing the transmitter.

868MHz RECEPTION CHECK

If the outdoor temperature and humidity data are not being received within three minutes after setting up (or outdoor display always show "- -. -" in the outdoor section of the Weather station during normal operation), please check the following points:

1. The distance of the weather station or transmitter should be at least 1.5 to 2 meters away from any interfering sources such as computer monitors or TV sets.
2. Avoid positioning the Weather Station onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones or speakers operating on the same signal frequency (868MHz) may prevent correct signal transmission and reception.
4. Neighbours using electrical devices operating on the 868MHz signal frequency can also cause interference.

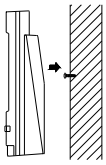
Note:

When the 868MHz signal is received correctly, do not re-open the battery cover of either the transmitter or Weather Station, as the batteries may spring free from the contacts and force a false reset. Should this happen accidentally then reset all units (see **Setting up** above) otherwise transmission problems may occur.

The transmission range is about 100 m from the transmitter to the Weather Station (in open space). However, this depends on the

surrounding environment and interference levels. If no reception is possible despite the observation of these factors, all system units have to be reset (see **Setting up**).

POSITIONING THE WEATHER STATION:



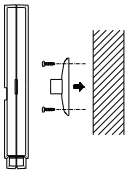
Before wall mounting, please check that the outdoor temperature and humidity values can be received from the desired locations. To wall mount:

1. Fix a screw (not supplied) into the desired wall, leaving the head extended out by about 5mm.
2. Hang the weather station onto the screw. Remember to ensure that it locks into place before releasing.

AFFIXING THE OUTDOOR DATA TRANSMITTER:

The Transmitter is supplied with a holder that may be attached to a wall with the two screws supplied. The Transmitter can also be position on a flat surface by securing the stand to the bottom to the Transmitter. Before securing the transmitter, ensure that the 868MHz signal (outdoor readings) is properly received.

TO AFFIX BY SCREW, FOLLOW THESE STEPS:



1. Using the holes in the holder as a guide, mark the holes on the drilling surface.
2. Drill the marked area to the required depth.
3. Screw the holder onto wall and click the transmitter into holder.

The mounting surface can, however, affect the transmission range. If for example the unit is attached to a piece of metal, it may then either reduce or increase the transmitting range. For this reason, we recommend not placing the unit on any metal surfaces or in any position where a large metal or highly polished surface is in the immediate proximity (garage doors, double glazing, etc.). Choose a sheltered place. Avoid direct rain and sunshine.

Before securing in place, please ensure that the Weather station can receive the 868MHz signal from the outdoor transmitter at the positions that you wish to situate them.
The Outdoor data Transmitter simply clicks in or out of the holder. When inserting or removing the Outdoor Transmitter from the wall holder please hold both units securely.

CARE AND MAINTENANCE:

- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the unit and give inaccurate forecasts and readings.
- Precautions shall be taken when handling the batteries. Injuries, burns, or property damage may be resulted if the batteries are in contact with conducting materials, heat, corrosive materials or explosives. The batteries shall be taken out from the unit before the product is to be stored for a long period of time.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended type.
- When cleaning the display and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCD and casings.
- Do not submerge the unit in water.
- Special care shall be taken when handling a damaged LCD display. The liquid crystals can be harmful to user's health.
- Do not make any repair attempts to the unit. Return them to their original point of purchase for repair by a qualified engineer. Opening and tampering with the unit may invalidate their guarantee.
- Never touch the exposed electronic circuit of the device as there is a danger of electric shock should it become exposed.
- Do not expose the units to extreme and sudden temperature changes, this may lead to rapid changes in forecasts and readings and thereby reduce their accuracy.

SPECIFICATIONS:

Temperature measuring range:

Indoor	:	-9.9ºC to +59.9ºC with 0.1ºC resolution 14.2°F to +139.8°F with 0.2°F resolution (“OF.L” displayed if outside this range)
Outdoor	:	-39.9ºC to +59.9ºC with 0.1°C resolution -39.8ºF to +139.8ºF with 0.2ºF resolution

("OF.L" displayed if outside this range)
Relative humidity measuring range:
Indoor humidity range : 1% to 99% with 1% resolution (Display "- -" if temperature is OL.F; display "- -" if < 1% and "99%" if > 99%)
Outdoor humidity range: 1% to 99% with 1% resolution (Display "- -" if outside temperature is OF.L; display 1% if < 1% and 99% if > 99%)
Indoor Temperature checking interval : every 10 seconds
Indoor Humidity checking interval : every 20 seconds
Outdoor Data reception : every 4 seconds
Power consumption:
Weather station : 3 x AA, IEC, LR6, 1.5V
Outdoor transmitter : 2 x AA, IEC, LR6, 1.5V
Battery life cycle : approximately 24 months
(Alkaline batteries recommended)
Dimensions (L x W x H)
Weather Station : 106 x 36.3 x 138 mm
Outdoor Transmitter (excluding stand): 43 x 23 x 160mm

LIABILITY DISCLAIMER

- The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment
- Please contact your local or/and regional authorities to retrieve the addresses of legal dumping grounds with selective collection
- All electronic instruments must from now on be recycled. User shall take an active part in the reuse, recycling and recovery of the electrical and electronic waste.
- The unrestricted disposal of electronic waste may do harm on public health and the quality of environment.
- This product must however not be thrown in general rubbish collection points.
- As stated on the gift box and labeled on the product, reading the "User manual" is highly recommended for the benefit of the user.
- The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.
- This product is not to be used for medical purposes or for public information.
- The specifications of this product may change without prior notice.

- This product is not a toy. Keep out of the reach of children.
- No part of this manual may be reproduced without written consent of the manufacturer.

R&TTE Directive 1999/5/EC

Summary of the Declaration of Conformity: We hereby declare that this wireless transmission device does comply with the essential requirements of R&TTE Directive 1999/5/EC.