WIRELESS 433 MHz WEATHER STATION

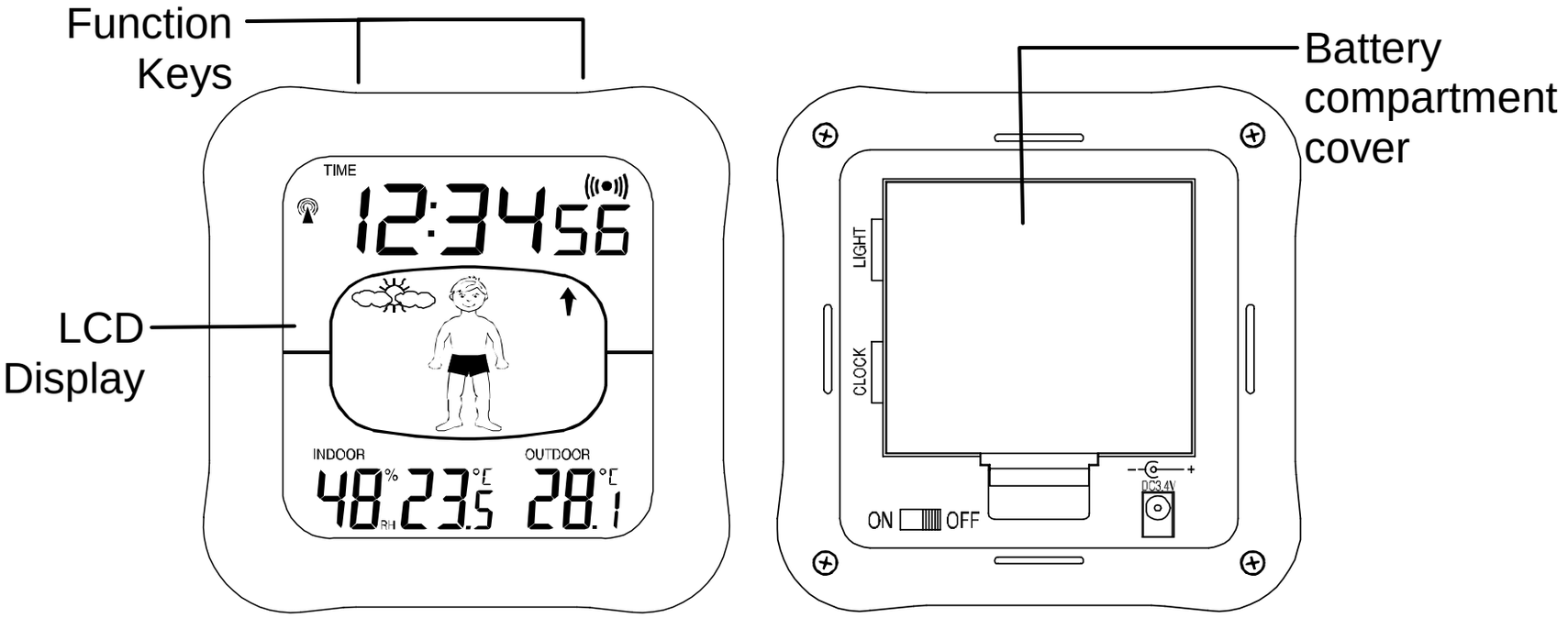
Instruction Manual

INTRODUCTION:

Congratulations on purchasing this fancy Cubic Weather station wireless 433MHz transmission. It not only displays the indoor temperature and humidity but also receives the outdoor temperature. It is further acting as a DCF-77 radio controlled clock and gives colour-changing backlight.

With the totally 15 different weather forecast icons featured by "weather man", users can easily observe the forecast weather condition and will no longer worry the sudden weather change. This innovative product is ideal for use in the home or office.

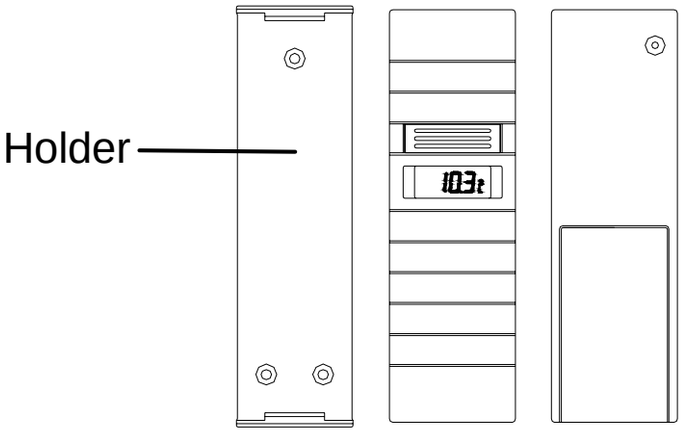
THE WEATHER STATION



FEATURES

- DCF-77 Radio-controlled time and date
- 12/24 hour display
- Hour, minute and second time display
- Calendar (weekday, date and month)
- Time zone option ±12 hours
- Weather forecasting with 15 easy-to-read weather forecast signs featured by weather man
- Displays indoor temperature & humidity
- Display outdoor temperature
- Temperature display in degrees Celsius (°C) or Fahrenheit (°F) selectable
- Colour-changing EL backlight (with permanent backlight ON/OFF function, and the case of the weather station will also be illuminated when the backlight is ON).
- Alarm with snooze function
- LCD contrast setting
- Table standing

TEMPERATURE TRANSMITTER:



- Remote transmission of outdoor temperature to Weather station by 433 MHz
- Shower pro-of casing
- Wall mounting case (Mounting at a sheltered place. Avoid direct rain and sunshine)

SETTING UP

1. First, insert 4 x AAA, IEC LR3, 1.5V batteries into the weather station. Once the batteries are in place, all segments of the LCD will light up briefly. Then the indoor temperature, the weather man icon and the time as 0:00, will be displayed. If the indoor temperature is not displayed after a few seconds, remove the batteries and wait for at least 30 seconds before reinserting them. Once the indoor data is displayed proceed to step 2.
2. Within 45 seconds of activating the Weather station, place 2 x AA, IEC LR6, 1.5V batteries into the transmitter.
3. After inserting the batteries into the transmitter, the weather station will start receiving data from the transmitter. The remote temperature will then be displayed on the 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. When the transmitter is set up, there is a testing period. Then DCF-77 time code reception is automatically started just after the clock is activated. This takes typically between 3 - 5 minutes in good conditions. This time period is an excellent opportunity to locate the transmitter in suitable location outdoors. In order to ensure sufficient 433 MHz transmission however, this should under good conditions be no more than 25 meters from where the Weather station will be finally positioned (see notes on “**POSITIONING THE OUTDOOR TRANSMITTER**” and “**433 MHZ RECEPTION**”).
5. If after 10 minutes the DCF time has not been received, use the MODE/ MIN key to manually enter a time (and date) initially. The unit will still try and receive the time signal regularly despite it being manually set. When it does receive the signal, it will change the manually set time into the received time.

Note:

Should the total time of inserting the batteries into the transmitter take longer than 1-1/2 minutes from the time of inserting the batteries into the weather station then temperature reception problems may occur. If the temperature is not being received, then see "**433 MHZ RECEPTION**", before resetting the units.

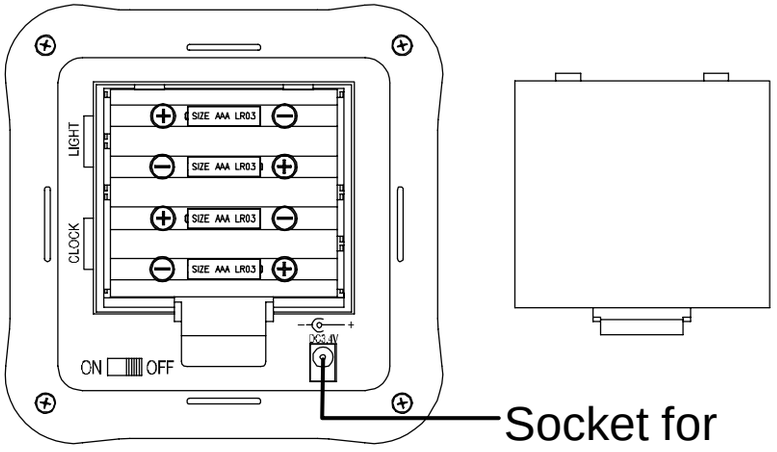
In the event of changing batteries to the transmitter, the weather station needs to be reset. (See **Resetting the weather station**)

RESETTING THE WEATHER STATION

To reset the Weather station to the factory default setting or in case of a malfunction or changing batteries to transmitter, please remove all batteries from the unit and unplug the AC/DC adapter from any power source. Wait at least for 3 minutes before powering up the Weather station again.

TO INSTALL AND REPLACE BATTERIES INTO THE WEATHER STATION

The Weather station uses 4 x AAA, IEC LR3, 1.5V batteries (Two no. of batteries for the station functioning and two for the backlight). To install and replace the batteries, please follow the steps below:

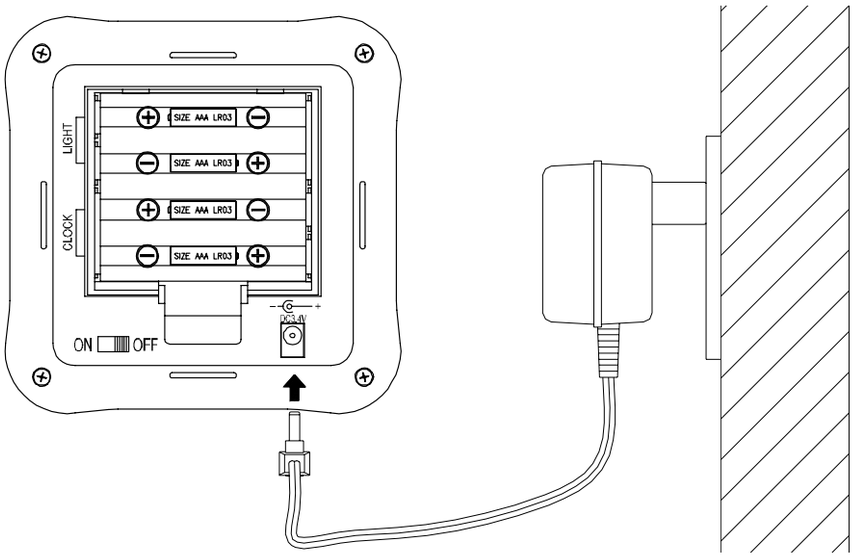


1. Insert finger or other solid object in the space at the bottom centre of the battery compartment and lift up to remove the cover.
2. Insert batteries observing the correct polarity (see marking).
3. Replace compartment cover.

In addition or instead of inserting batteries, the AC adapter can be used:

1. Connect the power adapter to a wall socket

2. Insert the adapter into the jack at the bottom of the station
3. The Weather station will now start receiving the DCF time signal. After approximately 3 to 5 minutes, the DCF time will be displayed (Also see "**SETTING UP**" below) .



Important!

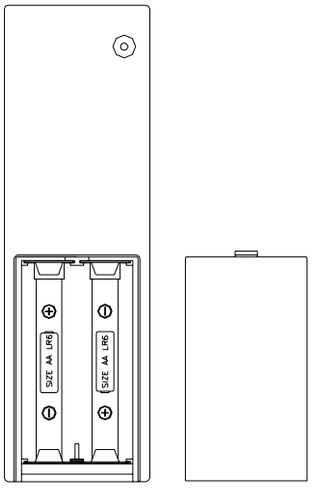
Use only the adapter provided with the Weather station and make sure that your household voltage is appropriate to the working voltage of the transformer. Otherwise your Weather station may be damaged.

POWER SUPPLIED BY BATTERIES AND AC/DC ADAPTER

If the Weather station is first powered by batteries and the power adapter is subsequently used for extended period of time, the main power source of the Weather station will switch to AC/DC power. The batteries will then act as a backup power source in case of power failure.

TO INSTALL AND REPLACE BATTERIES IN THE TEMPERATURE TRANSMITTER

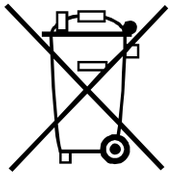
The Temperature Transmitter uses 2 x AA, IEC, LR6, 1.5V batteries. To install and replace the batteries, please follow the steps below:



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

BATTERY CHANGE:

It is recommended to replace the batteries in all units regularly to ensure optimum accuracy of these units (Battery life See **Specifications** below).



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

DCF-77 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 1500km radius of Frankfurt.

Once the outdoor reception test period is completed, the DCF tower icon in the time display will start flashing. This indicates that the unit 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 will be displayed.

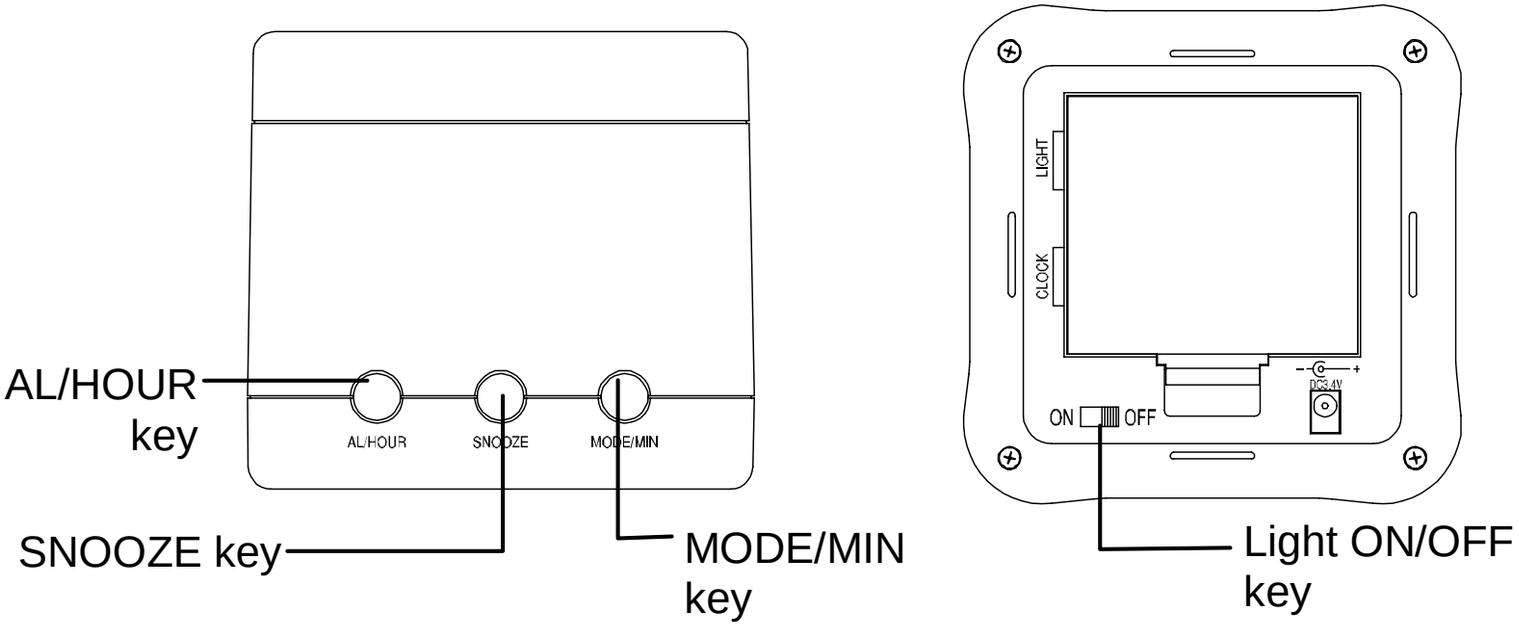
If the tower icon flashes, but does not set the time or the DCF tower does not appear at all, then please take note of the following:

- 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.

FUNCTION KEYS

There are three function keys at the top of the weather station and one at the back.



Top **Back**

SNOOZE key

- Press to initiate the snooze function when the alarm is sounding.
- Press to confirm the manual setting in the different setting modes

- Press to activate the EL back-light

AL/HOUR key

- Press and hold to advance to the alarm time setting
- Press to set the hour in alarm setting mode
- Press to set the hour in time setting mode
- Press to set the date in calendar setting
- Press to activate the EL back-light
- Press to stop the alarm and snooze

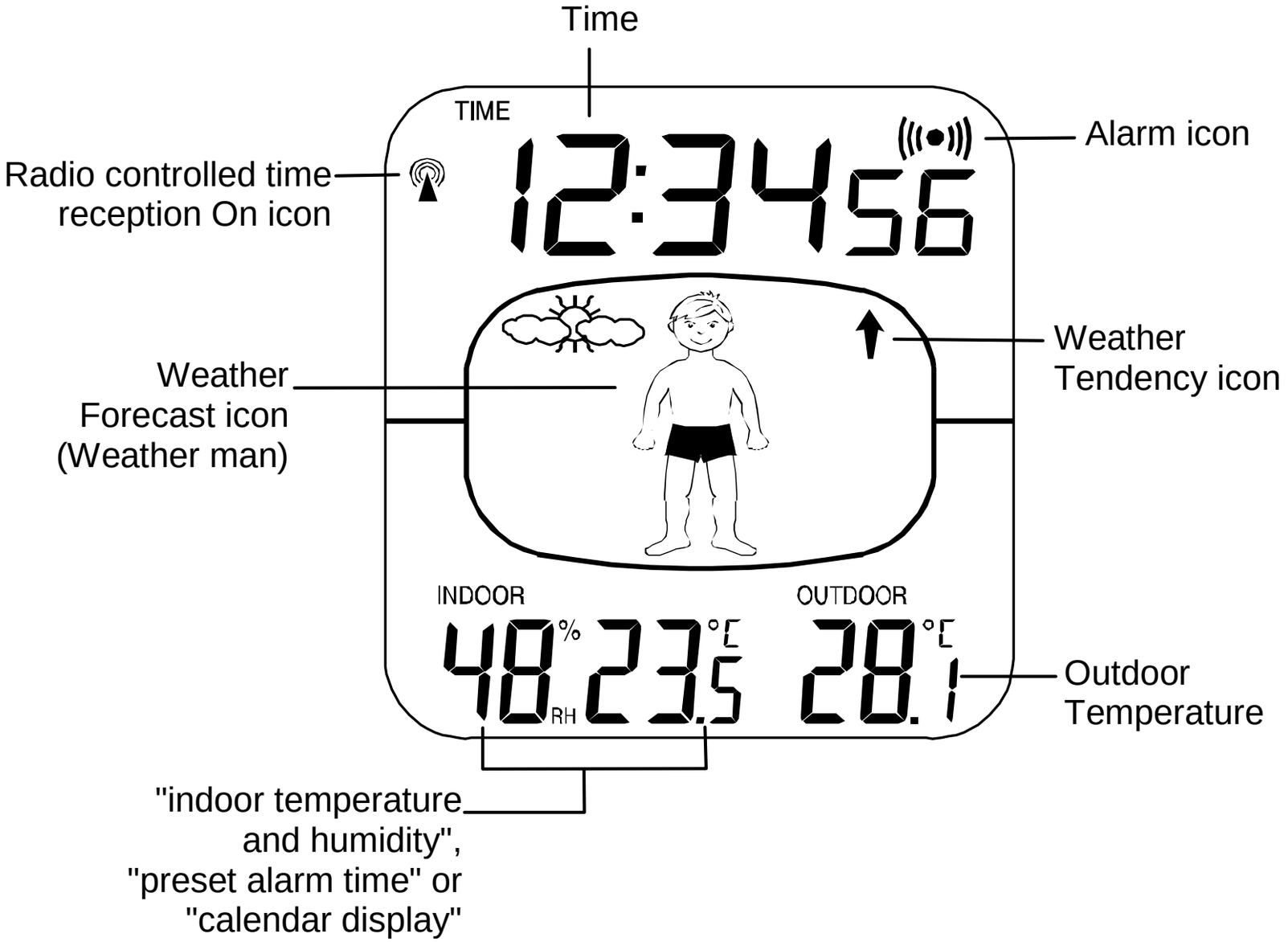
MODE/MIN key

- Press and hold to advance to the manual setting
- Press to set the minute in alarm setting mode
- Press to set the minute in time setting mode
- Press to set the month and year in calendar setting mode
- Press to toggle between various display for "day & month", "day & weekday", "indoor temperature & humidity" and "alarm time"
- Press to activate the EL back-light
- Press to stop the alarm and snooze

LIGHT ON/OFF key

- To Switch On / Off the permanent mode of colour-changing LED backlight

LCD SCREEN AND SETTINGS:



For better distinctness the LCD screen is split into 4 sections:

Section 1 - TIME

- In normal mode, display the current time.

Section 2 - WEATHER ICON (FEATURED BY WEATHER MAN)

- Display of the weather to be expected in form of 15 fancy weather symbols (featured by Weather man) which change their appearance depending on the air pressure development (past air pressure change) and the current outdoor temperature.
- Display the weather tendency indicator

Section 3 - INDOOR DATA/ PRESET ALARM TIME/ CALENDAR

- Display the "day & month", "day & weekday", "indoor temperature & humidity" or "alarm time"

Section 4 - OUTDOOR TEMPERATURE

- Display the outdoor temperature.

MANUAL SETTING

LCD contrast level

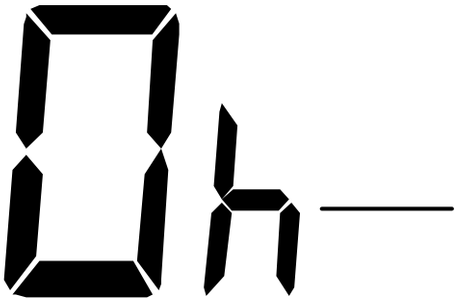
After pressing and holding the MODE/MIN key for about 3 seconds, the manual setting mode is activated. Then The LCD contrast can be set:

1. The contrast level will be flashing. Press the MODE/MIN key to adjust the contrast level 0 to 7 (default: 5).
2. Press the SNOOZE key to confirm and enter the **Time zone setting mode.**

Time zone setting

The time zone default of the Weather station is “0”. To set a different time zone:

1. The current time zone value at the bottom of the LCD display starts flashing.



2. Press and release MODE/MIN key to adjust the time zone. The range runs from 0, -1, -2 to -12, then 12, 11, 10 to 0, in consecutive 1-hour intervals.
3. Confirm with the SNOOZE key and enter the **Manual time setting**.

Manual time setting

In case the Weather station cannot detect the DCF-signal (for example due to disturbances, transmitting distance, etc.), the time can be manually set. The station will then work as a normal Quartz

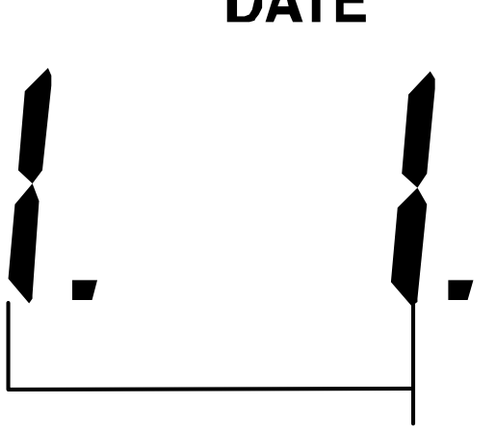
clock.

1. The hour and the minute digits will start flashing.
2. Use the AL/HOUR key to set the hour; MODE/MIN key to set the minute.
3. Confirm with the SNOOZE key and enter the **Calendar setting**.

Note:
The unit will still try and receive the time signal regularly despite it being manually set. When it does receive the signal, it will change the manually set time into the received time.

Calendar setting
The date default of the Weather station is 1. 1. in the year 2005. Once the radio-controlled time signals are received, the date is automatically updated. However, if the signals are not received, the date can also be set manually.
1. The year starts flashing.

2. Use the MODE/MIN key to set the year (between year 2003-2029).
3. Press the SNOOZE key to confirm and to enter the month and day setting. The month and day digits will start flashing.

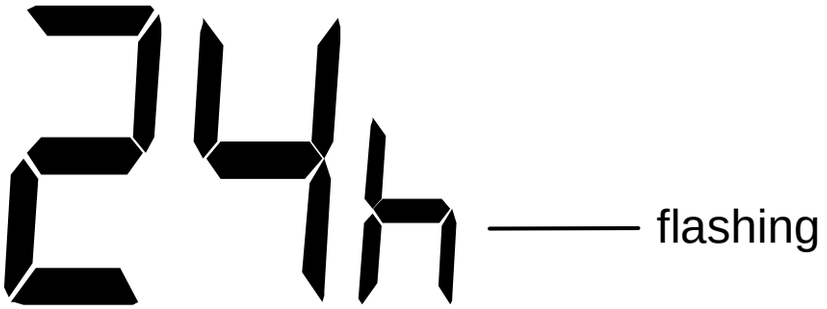


"Day. Month." (for 24h time display)
"Month. Day." (for 12h time display)

4. Use the AL/HOUR key to set the day and MODE/MIN key to set the month.
5. Press the SNOOZE key again to confirm and to enter the **12/24 hour time format setting**.

12/24 hour time format setting

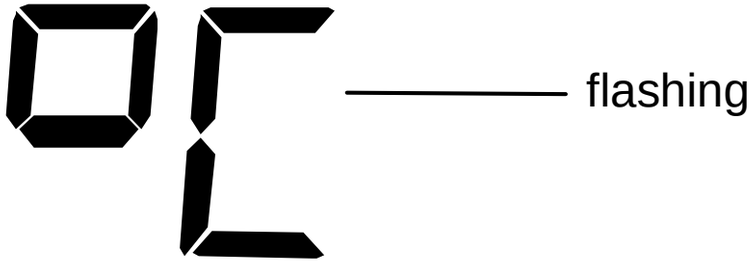
1. The time format digit starts flashing. Press the MODE/MIN key to select the 12-hour or 24-hour time format.



2. Press the SNOOZE key again to confirm and to enter the **Temperature unit (°C/ °F) setting**.

Temperature unit (°C/ °F) setting

1. The temperature unit digit starts flashing. Press the MODE/MIN key to select the unit °C or °F.



2. Press the SNOOZE key again to confirm and to enter the **Daylight saving time setting**.

Daylight saving time setting

Note:

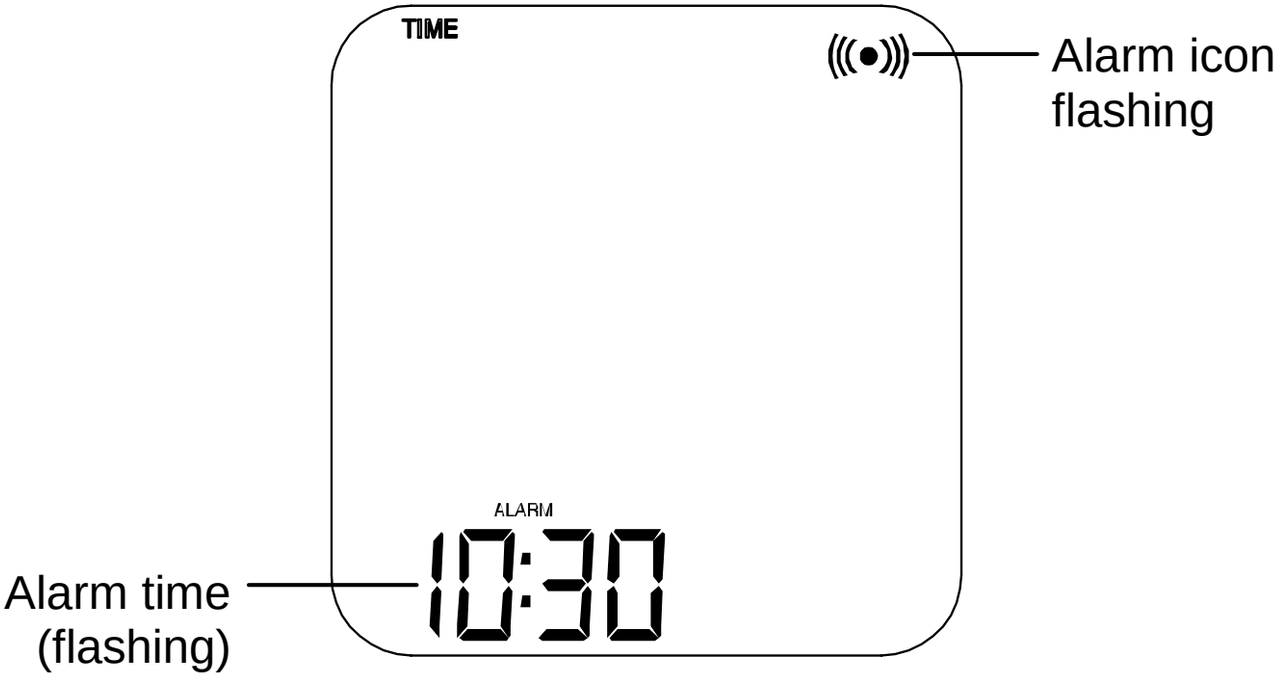
The function of daylight saving time on/off is only applicable to specific area in United states using WWVB time sources. It is not applicable for DCF-77 signal in European countries.

- User may skip doing this part of setting for this European version weather station (-press the SNOOZE key to exit the setting mode and go back to the normal display). Setting of “dST On” or “dST Off” will have no effects on the reception time.

TIME ALARM

Setting the alarm

1. Press and hold “AL/HOUR” button for about three seconds until the alarm time is flashing.



2. Press and release “AL/HOUR” to advance the hour, and “MODE/MIN” to advance the minute. The time will display in 24-hour format.
3. Press the SNOOZE key to confirm. The alarm is now set and activated.

Activating / Deactivating the alarm

1. After entering the alarm-setting mode, the alarm is activated.
2. To toggle between activating and deactivating the alarm, press the “AL/HOUR” button briefly. Alarm-on icon, “(((•)))” will be displayed next to the time display when the alarm is activated.

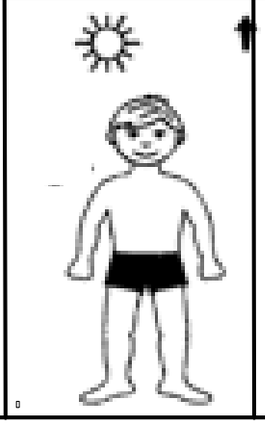
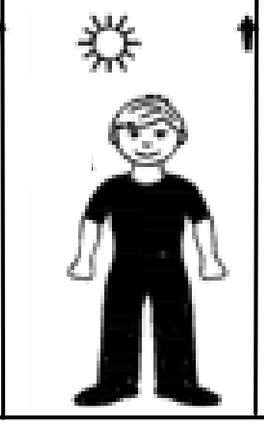
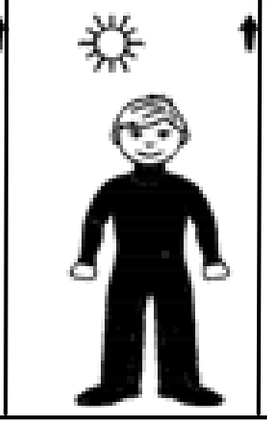
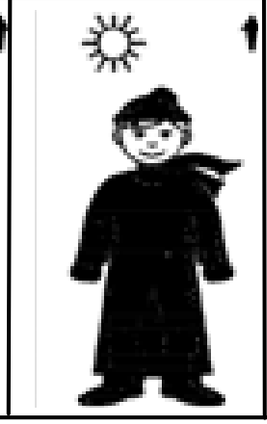
Turning alarm off (while sounding)

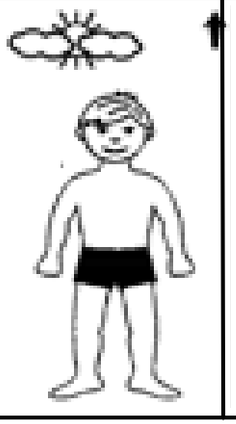
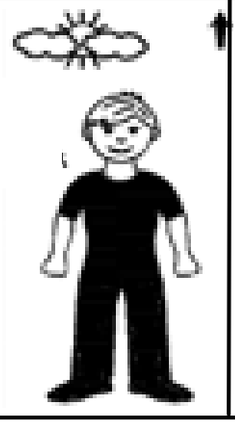
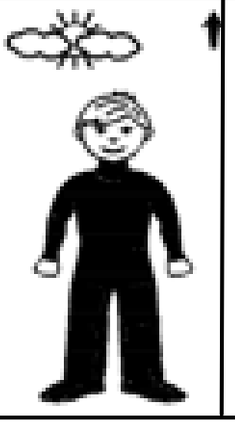
1. While the alarm is sounding, press and release the SNOOZE bar to disable the alarm for 10 minutes. (After the SNOOZE bar is pressed, the alarm icon will keep flashing. After 10 min, the alarm will sound again.)
2. To disable the alarm, press and release the AL/HOUR or MODE/MIN button.

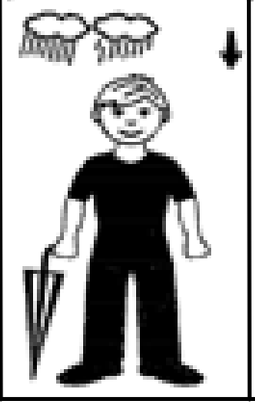
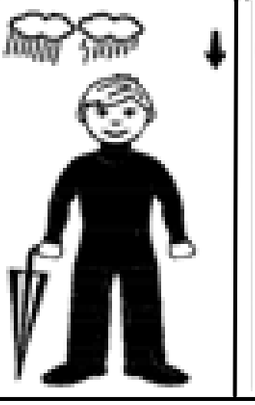
WEATHER FORECAST AND TENDENCY:

The weather forecast icons (Weather man):

One of the 15 different weather icons (featured by Weather man with different clothing) is displayed in the centre of LCD, which indicates the different forecast weather condition due to air pressure level (Sunny, Sunny + Cloudy or Rainy) and the current outdoor temperature:

	≥ 26°C	**19 – 25.9°C**	**10 – 18.9°C**	**0 – 9.9°C**	**< 0°C**
Sunny					

	≥ 26°C	19 – 25.9°C	10 – 18.9°C	0 – 9.9°C	< 0°C
Sunny + Cloudy					

	≥ 26°C	19 – 25.9°C	10 – 18.9°C	0 – 9.9°C	< 0°C
Rainy					

For every sudden or significant change in the air pressure, the weather icons will update accordingly to represent the change in weather. If the icons do not change, then it means either the air pressure has not changed or the change has been too slow for the

Weather station to register. However, if the icon displayed is a sun or raining cloud, there will be no change of icon if the weather gets any better (with sunny icon) or worse (with rainy icon) since the icons are already at their extremes.

The icons displayed forecasts the weather in terms of getting better or worse and not necessarily sunny or rainy as each icon indicates. For example, if the current weather is cloudy and the rainy icon is displayed, it does not mean that the product is faulty because it is not raining. It simply means that the air pressure has dropped and the weather is expected to get worse but not necessarily rainy.

Note:

After setting up, readings for weather forecasts should be disregarded for the next 12-24 hours. This will allow sufficient time for the Weather station to collect air pressure data 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. In areas that experience sudden changes in weather (for example from sunny to rain), the Weather station will be more accurate compared to use in areas where the weather is stagnant most of the time (for example mostly sunny).

If the Weather station is moved to another location significantly higher or lower than its initial standing point (for example from the ground floor to the upper floors of a house), remove the batteries and re-insert them after about 30 seconds. By doing this, the Weather station will not mistake the new location as being a possible change in air-pressure when really it is due to the slight change of altitude. Again, disregard weather forecasts for the next 12 to 24 hours as this will allow time for operation at a constant altitude.

THE WEATHER TENDENCY INDICATOR

Working together with the weather icons are the weather tendency indicators (the upward and downward arrow located near the Weather man). When the indicator points upwards, it means that the air-pressure is increasing and the weather is expected to improve, but when indicator points downwards, the air-pressure is dropping and the weather is expected to become worse.

Therefore, user may see how the weather has changed and is expected to change. For example, if the indicator is pointing downwards together with cloudy icons, it means that the last noticeable change in the weather was when it was sunny (the sunny icon only). Therefore, the next change in the weather will be the cloudy icons since the indicator is pointing downwards.

Note:

Once the weather tendency indicator has registered a change in air pressure, it will remain permanently visualized on the LCD.

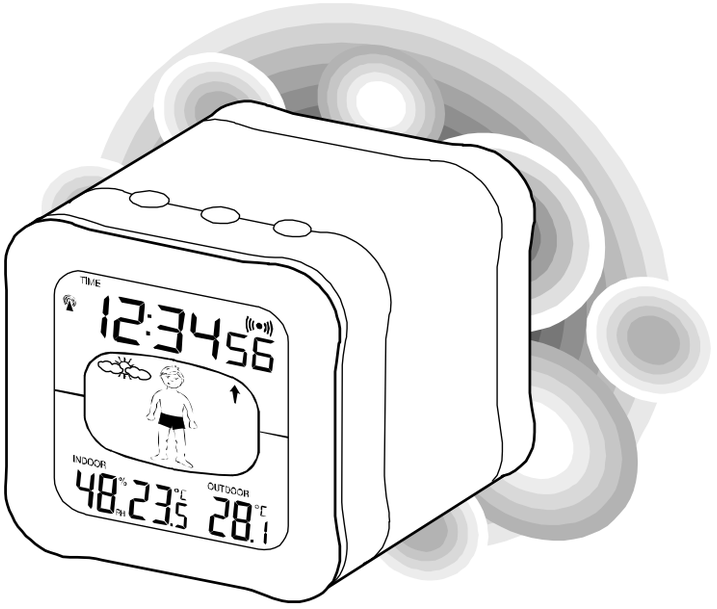
TOGGLE BETWEEN THE DISPLAY OF INDOOR TEMPERATURE/ HUMIDITY, PRESET ALARM TIME AND CALENDAR

By pressing shortly the MODE/MIN key, you will toggle between the following displays:

1. Indoor temperature and humidity;
2. Preset alarm time;
3. Month and day
3. Day and weekday;

COLOUR-CHANGING BACKLIGHT

1. The Weather station has a colour-changing EL backlight designed for night-viewing. This will light up for about 10 seconds when any button is pressed. The case of the weather station will also be illuminated when the backlight is ON.



2. When the backlight key is switch "ON", the EL backlight will be turned on permanently.

Note: If batteries are used, the permanent switching on the backlight may drain off the batteries faster.

3. The EL backlight will be turned on when the alarm time is reached.

433MHz RECEPTION

If the outdoor temperature data are not being received within three minutes after setting up (or “- -. -” is shown in the outdoor temperature section of the **Weather station** after 3 failed attempts during normal operation), please check the following points:

1. The distance of the **Weather station** or transmitter should be at least 2 metres away from any interfering sources such as computer monitors or TV sets.
2. Avoid placing the transmitter onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones or speakers operating on the 433MHz-signal frequency may prevent correct signal transmission or reception. Neighbours using electrical devices operating on the 433MHz-signal frequency can also cause interferences.

Note:

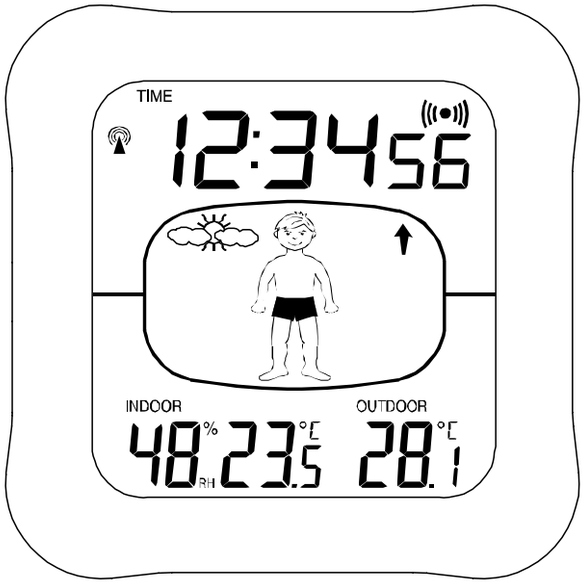
When the 433MHz signal is received correctly, do not re-open the battery cover of either the transmitter or Weather station, as the batteries may spring free from the contacts and force a false reset. Should this happen accidentally then reset all units (see **“Setting up”** above) otherwise transmission problems may occur.

The transmission range is around 25 metres from the Temperature 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”** above).

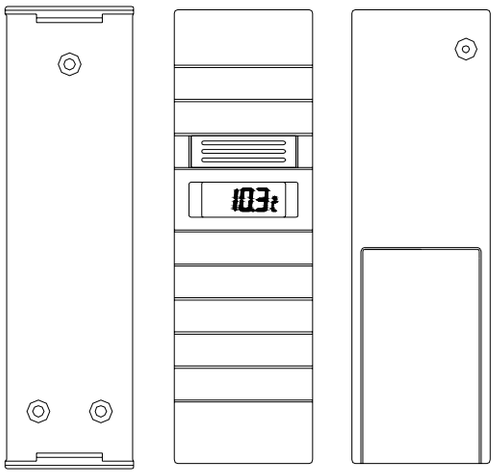
POSITIONING THE WEATHER STATION:

Free standing

The weather station can be placed onto any flat surface.

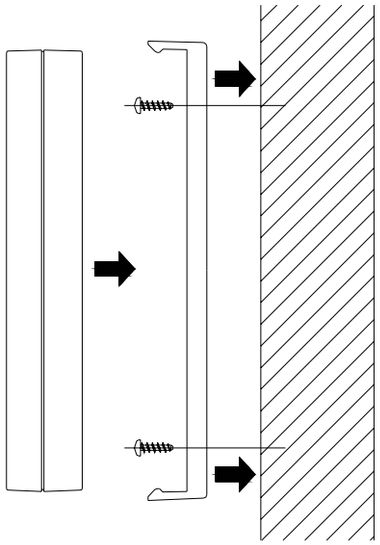


POSITIONING THE TEMPERATURE TRANSMITTER:



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.

To wall mount:



1. Secure the bracket onto a desired wall using the screws and plastic anchors.
2. Clip the remote temperature sensor onto the bracket.

Note:

Before permanently fixing the transmitter wall base, place all units in the desired locations to check that the outdoor temperature reading is receivable. In event that the signal is not received, relocate the

transmitters or move them slightly as this may help the signal reception.

CARE AND MAINTENANCE:

- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the units and give inaccurate forecasts and readings.
- 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 units in water.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended type.
- Do not make any repair attempts to the units. Return it to their original point of purchase for repair by a qualified engineer. Opening and tampering with the units may invalidate their guarantee.
- 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 +36.9ºC with 0.1°C resolution (“OF.L” displayed if outside this range)
Indoor humidity range:		1% to 99% with 1% resolution

(Display “- -“ if outside this range)
Indoor temperature checking intervals : Every 15 seconds
Indoor humidity checking intervals : Every 20 seconds

Outdoor : -29.9ºC to +69.9ºC with 0.1°C resolution
(“OF.L” displayed if outside this range)
Outdoor temperature checking intervals : Every 5 minutes

Power consumption:
Weather station : 4 x AAA, IEC LR3, 1.5V

Or
AC adapter : INPUT 230V AC 50Hz;
OUTPUT: DC 3.4V (use the provided AC/DC adapter only)
Outdoor transmitter : 2 x AA, IEC LR6, 1.5V

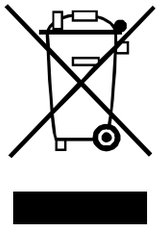
Battery life cycle (Alkaline batteries recommended)
Weather Station : Approximately 12 months
Outdoor transmitter : Approximately 24 months

Dimensions (L x W x H):
Weather station : 90 x 81 x 90 mm
Outdoor transmitter : 39 x 21 x 128 mm

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.
- As stated on the gift box and labeled on the product, reading the “User manual” is highly recommended for the benefit of the user. This product must however not be thrown in general rubbish collection points.
- 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 designed for use in the home only as indication of the temperature.
- 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 authorization 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.