

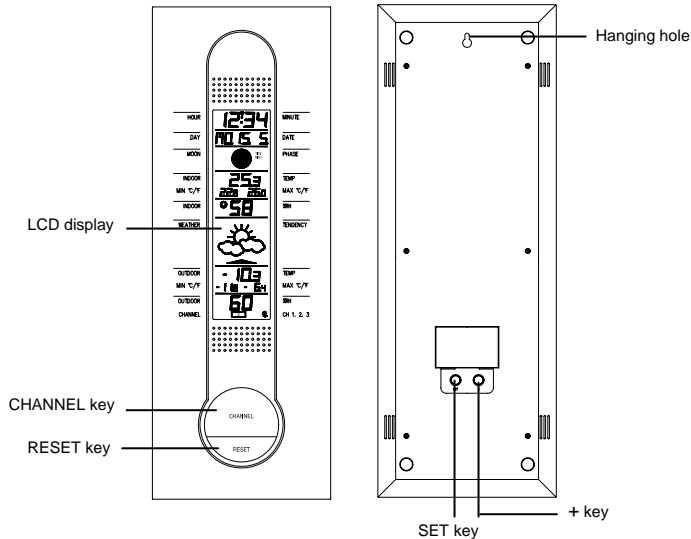
WIRELESS WEATHER STATION

Instruction manual

Introduction:

Congratulations on purchasing this state-of-the-arts Weather Station with radio-controlled time as an example of fine design and quality piece of engineering. The operation of this product is easy and straightforward. By reading this operating manual, users will receive a better understanding of the Weather Station together with the optimum benefit of all its features.

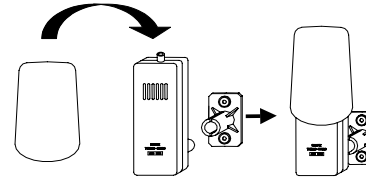
Weather Station



- Radio controlled time with manual setting option.
- 12/24 hour time display
- Calendar display
- Time zone selectable (± 12 hours)
- Moon phases display
- Degree Celsius or Fahrenheit temperature selectable
- Current indoor temperature display
- Simultaneous minimum and maximum indoor temperature recordings
- Current relative indoor humidity display with "☺" Smiling or "☹" Sad face for comfort level reading
- 3 weather icons for weather forecasting
- Weather tendency indicator
- Current outdoor temperature display
- Simultaneous minimum and maximum outdoor temperature recordings
- Current relative outdoor humidity display
- Manual minimum and maximum temperature recording resets

- LCD contrast changeable to 8 different tones
- Can take up to 3 outdoor transmitters
- Low battery indicator
- Wall mounting

Thermo-hygro Transmitter:

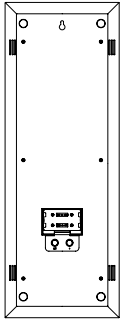


- Remote transmission of outdoor temperature and humidity to weather station by 433 MHz signals
- Rain proof casing
- Wall mounting case

Setting up:

1. First, insert the batteries into the Weather station (see **How to install and replace the batteries in the weather station** below). Once the batteries are in place, all segments of the LCD will light up briefly, then the indoor temperature and humidity, the time as "-:--", the date as "-----", the Moon phase and the weather icons sun and clouds will be displayed. If the indoor temperature and humidity are not displayed after a few seconds, remove the batteries and wait for at least 10 seconds before reinserting them. Once the indoor data is displayed proceed to step 2.
2. Within 3 minutes of activating the Weather station, place the batteries into the transmitter (see **How to install and replace the batteries in the Thermo-hygro transmitter** below).
3. After inserting the batteries into the transmitter, the Weather station will start receiving data from the transmitter. The outdoor temperature and humidity should then be displayed on the Weather station. If this does not happen after 10 minutes, the batteries will need to be removed from both units and reset from step 1.
4. The Weather station can take up to 3 remote transmitters. If you have purchased additional transmitters, follow step 2 for all extra transmitters. However, ensure that you leave 10 seconds in between the reception of the last transmitter and the set-up of the following transmitter. The Weather station will number the transmitters in the order of set-up, i.e. the first transmitter will have the temperature displayed with the number 1 against it and so on.
5. When all the transmitters are set up, there is a testing period, during which the display switches quickly between all the received transmitters at random, according to which random transmission it receives. Pressing any key will stop this process and the display will show the temperature and humidity for the first transmitter. The process also stops automatically if no keys are pressed for a few minutes.
6. Once the remote temperature has been received and displayed on the Weather station, the DCF-77 time code reception is automatically started. This takes typically between 3-5 minutes in good conditions. This time period is an excellent opportunity to locate the transmitter(s) in suitable location(s) outdoors. In order to ensure sufficient 433 MHz transmission however, this should under good conditions be no more than 20 - 25 meters from where the Weather station will be finally positioned (see notes on "**Positioning**" and "**433 MHz Reception**").
7. If after 10 minutes, the DCF time has not been received, use the SET key to manually enter a time initially. The clock will then automatically attempt a new reception the next full hour or as long as one DCF reception is successful. When this is successful, the received time will override the manually set time. The date is also updated with the received time. Also a radio reception always take place between 00:00 am and 06:00 am each day (attempts DCF reception every full hour within this time framer. Please refers to notes on "**Radio controlled time**" and "**Manual time setting**").

How to install and replace the batteries in the Weather station



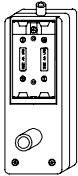
The Weather station uses 2 x AA, IEC LR6, 1.5V batteries. When batteries will need to be replaced, the battery symbol will appear on the LCD.

To install and replace the batteries, please follow the steps below:

1. Insert finger or other solid object in the space at the bottom 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 the batteries in the Thermo-Hygro transmitter



The Thermo-Hygro 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

Replacing batteries:

For best performance, when the low battery appears on the LCD screen of the Weather station or when contrast becomes dim and unclear on the LCD, batteries should be replaced to both units at least once a year to maintain maximum running accuracy.



Please help in the preservation of the environment and return used batteries to an authorized depot.

FUNCTION KEYS:

Weather station:

The weather station has four easy to use function keys, 2 on the front side and 2 at the back:

SET key

- Used to enter the set mode for the following functions: 12/24 hour display, Time, Time zone, Weekday, Month, Date, Year, °C/°F, and LCD contrast

CHANNEL key

- Used to toggle between the outdoor Thermo-Hygro transmitters 1, 2 and 3.
- Used to exit the manual setting mode

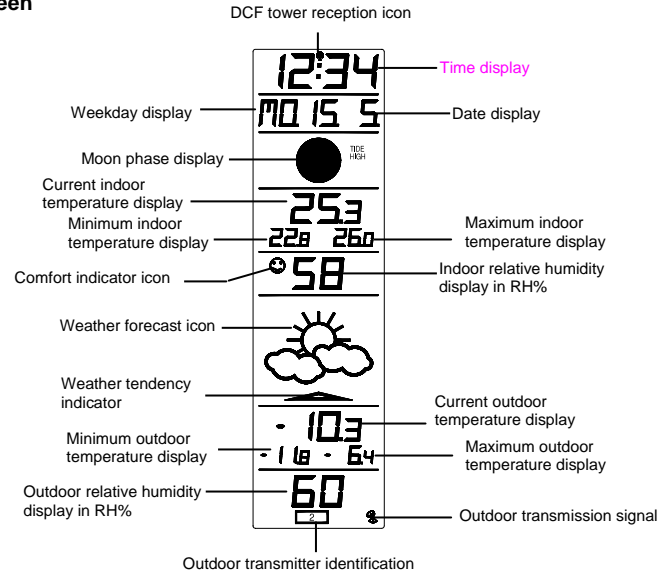
+ key

- Used to change the values in manual setting modes

RESET key

- Used to reset all indoor temperatures, and the selected outdoor transmitter temperatures
- Used to exit the manual setting mode

LCD Screen



After inserting the batteries, all the segments on the LCD will light up briefly before displaying the time and all the other modes

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 temperature is displayed on the Weather station, the DCF tower icon in the clock display will start flashing in the upper center in the time section. 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 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 meters.
- 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 night time, 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 setting

When pressing the SET key, the following manual setting can be changed:

- 12/24 hour time display
- Time setting
- Time zone setting (± 12 hours)
- Weekday setting
- Month setting
- Date setting
- Year setting
- °C/°F temperature setting
- LCD contrast setting

12/24 hour display setting



1. The “12” or “24” will be flashing (Default setting 24). Choose the desired time display mode by use of the + key.
2. Press the **SET** key to enter the **Time Setting** mode.

Note:

If 12 hour time display has been selected, the calendar will be: weekday, month and date.

If 24 hour time display has been selected, the calendar will display: weekday, date, and month.

Time setting

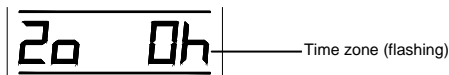


1. The hour digits will start flashing. Set the desired hours by pressing the + key followed by pressing the **SET** key.
2. Now the minute digits will start flashing. Set the desired minutes by pressing the + key
3. Press again the **SET** key to enter the **Time Zone Setting** mode.

Note:

If the DCF-77 time signal is already received by the Weather Station and is correctly displayed, then the time setting can be omitted.

Time Zone Setting



1. The display “Zo 0” will start flashing (Default setting “0h”). The time zone can be set ± 12 hours

2. Use of the + key to select the required time zone.
2. Press the **SET** key to enter to the **Date setting** mode.

Date Setting



If the DCF-77 time signal is already received by the Weather Station and is correctly displayed, then the date setting can be omitted.

1. The weekday digits will start flashing (weekday will only be displayed in German). Select the desired weekday by pressing the + key.
2. Press the **SET** key. The month will now start flashing.
3. Select the desired month by pressing the + key.
4. Press the **SET** key. The day starts flashing.
5. Select the day with the + key.
6. Press the **SET** key to select the year. The year will start flashing.
7. Select the year with the + key. A range from 2000 through 2020 can be chosen
8. Press again the **SET** key to enter the “**Temperature setting in °C/°F**” mode.

Note:

The Moon phase will be displayed accordingly to the date setting.

Temperature setting in °C/°F

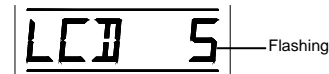
1. All indoor/outdoor, minimum and maximum temperature values will start flashing (Default setting in “°C”). Using the + key, select the temperatures to be displayed in degrees Celsius or in degrees Fahrenheit.
2. Press the **SET** key to enter the **LCD contrast setting** mode.

Important note:

The temperature icons “°C” or “°F” will not be displayed with the temperature values. Only the temperature values will be displayed and will toggle accordingly to the setting.

When toggling between the two settings, if lower temperature values are displayed in the both indoor and outdoor temperature sections, it means the temperature setting has been set in degree Celsius. If higher temperature values are displayed in both the indoor and outdoor temperature sections, it means the temperature setting has been set in degree Fahrenheit.

LCD contrast setting



1. The digit “LCD 5” will start flashing (default setting). Use the + key to select the required contrast from 0-7 level.
2. Press the **SET** key to exit the manual setting mode

Minimum and maximum indoor temperature recordings:

Underneath the current indoor temperature reading are the minimum and maximum indoor temperature recordings. These are simultaneously displayed for constant and easy reading. This feature is useful for displaying the recorded temperatures of the room which the Weather Station has been placed. When a new temperature low or high is reached, it will be automatically updated and displayed.

Indoor relative humidity with comfort level reading (face icons) and Outdoor relative humidity reading

The indoor relative humidity with comfort level reading and the outdoor relative humidity reading are displayed respectively underneath the indoor and outdoor temperatures. With the comfort level feature, users can determine how comfortable the indoor relative humidity is within their current surroundings. Again, as with the indoor temperature, the indoor relative humidity reading will automatically be taken once the batteries are inserted into the Weather station. The indoor relative humidity is updated every minute.

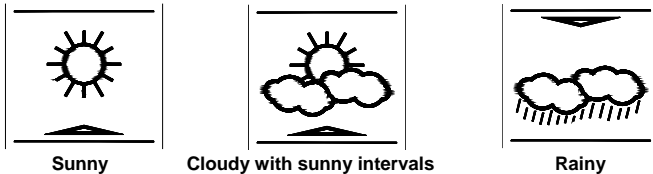
Once the batteries are inserted into the Thermo-Hygro transmitter, the Weather Station will also start receiving data from the transmitter. The outdoor relative humidity will then be displayed and will be updated every 5 minutes.

Working together with relative humidity, the Weather Station will register a comfort level reading by representation of a "☺" Happy or "☹" Sad face. The temperature range between +20°C to +25.9°C (+68°C to +79°C) and relative humidity range between 45% to 66% will register the "Happy" face. The "Sad" face will appear should either the temperature or humidity readings be outside these set ranges. This means, the "Happy" face represents a comfortable level and the "Sad" face represents an uncomfortable one.

When the "☹" "Sad" face appears with the word "DRY" or "WET", it means that the relative humidity reading is outside its comfort level range. However, "DRY" or "WET" will not appear if only the temperature reading is outside its comfort level range. The "☺" "Sad" face and "Dry" will appear if the relative humidity level is below 44% or "WET" will appear if the level is above 67%.

Weather tendency icons

There are 3 weather icons on the LCD which can be displayed in any one of the following combinations:



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 icons 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 rain.

Note:

After setting up, readings 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. 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 or the first floor 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, discard weather forecasts for the next 12 to 24 hours as this will allow time for operation at a constant altitude.

The weather tendency indicator

The weather tendency arrows are located above and below the weather icons and indicate the change in air-pressure and thus, forecasts the expected weather.

The tendency arrows can be displayed as follows:-

- **Tendency arrow pointing upwards:**

This means that the air-pressure is increasing and so the weather is expected to improve.

- **Tendency arrow pointing downwards:**

This means that the air-pressure is decreasing and the weather is expected to become worse.

Taking this into account, the unit can also show how the weather has changed and is expected to change. For example if the arrow pointing downwards is displayed together with cloud and sun weather icons, then the last noticeable change in the weather was when it was sunny (the sun icon only was shown). This means that the next change in the weather will be rainy icons since the tendency arrow is pointing downwards.

Note:

The weather tendency indicator arrows remain on the LCD regardless of the current weather. For example, if the current weather is raining, and the arrow is pointing downwards, it means that the weather will remain poor and if the weather is sunny and the arrow is pointing upwards, it means that the weather is expected to remain fine.

Outdoor Temperature Reading:

The outdoor temperature is displayed underneath the weather icons section. The Weather Station will automatically start scanning transmitter's 433 MHz signal after the batteries are inserted and once received, the outdoor temperature will appear on the LCD.

Minimum and maximum outdoor temperature recordings:

On the bottom line of the LCD are the outdoor minimum and maximum temperature recordings. These are simultaneously displayed for a constant update and easy reading. When a new temperature low or high is reached, it will be updated and recorded into the Weather Station's memory.

Resetting minimum and maximum indoor and outdoor temperatures

The minimum and maximum indoor and outdoor temperature can be reset by pressing the RESET key for 3 seconds. Once the RESET key is pressed, all indoor and the selected outdoor data will update to the current.

Note:

When resetting the minimum and maximum outdoor temperatures, the data from the selected transmitter will only be reset. The minimum and maximum outdoor temperatures from the other outdoor transmitters will not be reset. Each outdoor data have to be reset separately.

Thermo-Hygro transmitter:

The temperature and humidity are measured every 1 minute and transmitted every 5 minutes.

The range of the Thermo-Hygro transmitter may be affected by the temperature. At cold temperatures the transmitting distance may be decreased. Please bear this in mind when placing the transmitter.

Checking for 433 MHz reception:

The same as the DCF-77 signal, the Weather Station will automatically start scanning for the 433 MHz signal after the batteries are inserted. If the outdoor temperature is not displayed after about 30 seconds, then check the following list before resetting the units (see Resetting below):

1. The distance of the Weather Station should be at least 1.5 - 2.0 meters away from interfering sources such as computer monitors or TV sets.
2. Avoid placing the units onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones and speakers that operate on the same frequency signal (433 MHz) may prevent the transmission pick up.
4. Neighbours using electrical items operating on the 433 MHz signal can also cause interference.

Note:

When the 433 MHz signal for the outdoor temperature has been received, do not re-open the battery cover to either the Weather Station or transmitter as the batteries may accidentally spring free from the contacts and force a false reset. Should this happen then reset both units (see Resetting below) otherwise transmission problems may occur.

The transmission range from the temperature transmitter to the Weather Station (433 MHz) is up to 25 meters in open space, but again this depends on the surrounding environment and interference levels. If reception is still not possible, then reset both units (see Resetting below).

The transmitter's transmitting range may be affected by exposure to extreme cold conditions (-25°C) for long periods of time. Should this happen, the 433 MHz signal may be weakened and therefore result in shorter transmitting distances. The contrast of the LCD may reduce due to the power reduction of the batteries caused by such sub-zero temperature levels.

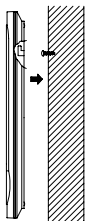
Resetting:

1. Remove batteries from both the Weather Station and the transmitter
2. Wait at least 30 seconds and then repeat the procedures specified in **Setting up** (above).

Note:

Always wait at least 30 seconds after removing the batteries before reinserting, otherwise start up and transmission problems may occur.

Positioning the Weather Station:



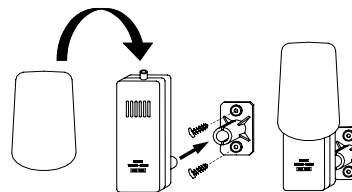
Before wall mounting, please check that the outdoor temperature can be received from the desired locations. To wall mount:

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

Positioning the Thermo-Hygro transmitter

The Thermo-Hygro transmitter is supplied with two screws for wall mounting. Before securing the transmitter, ensure that the 433MHz signal (outdoor temperature and relative humidity readings) is properly received.

The mounting surface can affect the transmission range. If e.g. 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.). Before securing in place, please ensure that the Weather station can receive the signal from the Thermo-Hygro transmitter at the positions that you wish to situate them.

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 them 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:

Recommended operating temperatures:	
Weather Station	: 0°C to +50°C
Transmitter	: -29.9°C to +59.9°C
Temperature measuring range	
Indoor	: 0°C to +60°C with 0.1°C resolution +32°F to +140°F with 0.2°F resolution ("OFL" displayed if outside this range)
Outdoor	: -29.9°C to +59.9°C with 0.1°C resolution -21.8°F to +139.8°F with 0.2°F resolution ("OFL" displayed if outside this range)
Relative indoor humidity range	: 20% to 95% with 1% resolution
if the indoor temperature is outside the range "OFL"	: Indoor relative humidity will display "- -"
if the indoor relative humidity is less than 20% or greater than 95%	: Indoor relative humidity will display 19% or 96%
Relative outdoor humidity range	: 20% or 95% ("- -" displayed if outside this range)
Temperature checking intervals	
Indoor	: 20 seconds
Outdoor	: 5 minutes
Humidity checking interval	
Indoor	: 1 minute
Outdoor	: 5 minutes
Transmitter temperature reading update	: 1 minute
Temperature transmitting range up to	: 25 meters
Power source:	

Weather Station	:	2 x AA, IEC LR6 1.5V batteries
Transmitter	:	2 x AA, IEC LR6 1.5V batteries
Battery life for both units (alkaline batteries recommended)	:	Approximately 12 months
Dimensions (L x W x H):		
Weather Station (excluding stand)	:	163 x 31 x 450 mm
Thermo-Hygro transmitter	:	60 x 73 x 121 mm

Liability Disclaimer

- 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.
- This product is designed for use in the home as indication of the future weather and is not 100% accurate. Weather forecasts and barometric readings given by this product should be taken only as an indication and not as being totally accurate.
- 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.