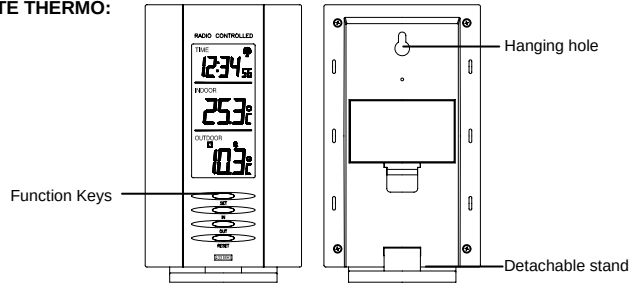
433 MHZ REMOTE THERMO

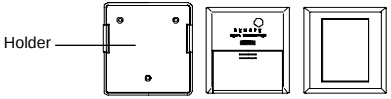
INTRODUCTION:

Congratulations on purchasing this innovative 433MHz Remote Thermo which displays the time with up to the minute indoor and up to five outdoor temperature readings. To enjoy the full benefits of this innovative product, please read this operating manual.

REMOTE THERMO:



TEMPERATURE TRANSMITTER:

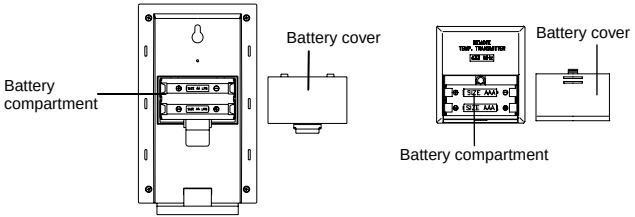


FEATURES:

- LCD clock in 24 hour time display (hour, minutes, seconds)
- DCF-77 Radio Controlled time with manual settings
- Indoor and outdoor temperature reading in degree Celsius (°C)
- Can receive up to five Outdoor transmitters
- Indoor and outdoor temperature with Minimum and Maximum records and time received for outdoor only
- Table standing or wall mountable (detachable table stand)

SETTING UP:

Please follow these steps to ensure that your new Remote Thermo works correctly with the temperature transmitter(s):



1. Flip open the battery cover at the back of the Remote Thermo as indicated above.
2. Checking the correct polarization, insert 2 x AA, IEC LR6, 1.5V batteries into the battery compartment and replace the cover (all the segments of the LCD screen will light up momentarily).
3. Remove the battery cover at the front side of the transmitter.
4. Checking the correct polarization, insert 2 x AAA, IEC LR3, 1.5V batteries into the battery compartment and replace the cover.
5. If you have purchased additional outdoor transmitter(s) wait until the outdoor temperature has been received from the one transmitter before activating the next transmitter by repeating steps 3 and 4.
6. However, ensure that you leave 10 seconds in between the reception of the last transmitter and the set-up of the following transmitter. The Remote Thermo 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. When the outdoor temperature(s) is received the Remote Thermo and transmitter(s) should be positioned in the desired places (see **Positioning & securing** below).
7. Once the outdoor temperature has been received and displayed on the Remote Thermo, the DCF-77 time code reception is automatically started. This takes typically between 3-5 minutes in good conditions.
8. 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 to receive the DCF time every full hour each day. When DCF reception signal is successful, the received time will override the manually set time. The date is also updated with the received time. (Please refer also to notes on **"DCF-77 Radio controlled Time"** and **"Manual Time Setting"**)

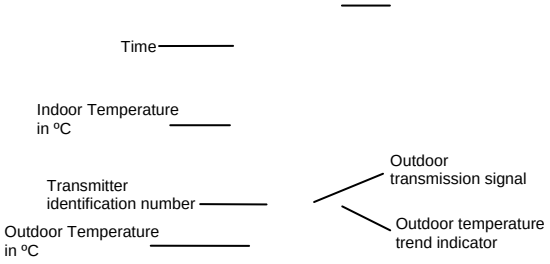
Note:
In the event of changing batteries in any of the units, all units need to be reset by following the setting up procedures. This is because a random security code is assigned by the transmitter at start-up and this code must be received and stored by the Remote Thermo in the first 2-1/2 minutes of power being supplied to it.

LCD SCREEN

The Remote Thermo's LCD is comprised of three lines and once the batteries are inserted, all the segments will light up momentarily before displaying:

1. Time "-:--"
2. Indoor temperature in degree Celsius (°C)
3. Outdoor temperature in degree Celsius (°C)

DCF time reception tower



DCF-77 RADIO CONTROLLED TIME RECEPTION:

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 Remote Thermo 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.

After the outdoor transmitter reception is completed in initial setup, the DCF tower icon in the clock display will start flashing in the upper right corner of the LCD. This indicates that the clock has detected the presence of a radio signal and is trying to receive it. When the time code is received, the DCF tower becomes permanently lit and the radio-controlled time will be displayed. If no display of tower icon is displayed on the LCD, it means that no radio signal has been detected.

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 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.

MANUALTIME SETTING:

After the batteries are inserted, set the time display as follow:

1. Press the “SET” key to enter the set mode. The “Time” icon in the time section starts flashing
2. Using the “IN” key, set the hour and the “OUT” key, set the minutes.

3. Press the “SET” key to exit the setting mode or wait for automatic timeout. Your Remote Thermo is now fully operational.

Note:

- When exiting the setting mode by pressing the “SET” key, the DCF time code reception will start automatically when the unit receives the signal. It will change the manually set time to the received time.
- When exiting the setting mode by automatically waiting for timeout, the DCF time code reception will not start.

USING THE REMOTE THERMO:

INDOOR TEMPERATURE:

The indoor temperature is displayed on the second line of the LCD under the time. The Remote Thermo’s built in sensor automatically measures the temperature once the batteries are inserted.

MINIMUM AND MAXIMUM INDOOR TEMPERATURE RECORDINGS:

By pressing the “IN” key the current indoor temperature will alternate between the minimum, maximum and current temperature recordings. Once a new indoor temperature high or low is reached, it will automatically set into the Remote Thermo’s memory.

OUTDOOR TEMPERATURE READING:

The outdoor temperature reading is on the bottom line of the LCD under the indoor temperature. The Remote Thermo receives the outdoor temperature via 433 MHz frequency when the batteries are inserted into the transmitter within the 2-1/2 minutes of the setting up time (See **Setting up** above).

Note:

See **“Checking 433MHz reception”** below if:

1. The outdoor temperature not be received within 2-1/2 minutes after inserting the batteries into a transmitter,
2. The outdoor temperature shows “--.-“ºC if the Remote Thermo cannot receive the outdoor temperature for 3 times continually.

MINIMUM AND MAXIMUM OUTDOOR TEMPERATURE READING:

By pressing the “OUT” key the current outdoor temperature will alternate between the minimum, maximum and current temperature recordings. The time when the minimum and maximum outdoor temperature records were received will be also shown on the LCD blinking (recorded time is for outdoor temperature only). Once a new outdoor temperature high or is low reached, it will automatically be set into the Remote Thermo’s memory.

RESETTING THE MINIMUM AND MAXIMUM TEMPERATURE RECORDING:

By pressing and holding down the "IN" or "OUT" key and then pressing the "RESET" key, the indoor or outdoor minimum and maximum temperature recordings will be reset to the current indoor or outdoor temperatures. Only the outdoor temperature display on the LCD will be reset. To reset another outdoor temperature, move to the desired transmitter number by pressing the "RESET" key.

OUTDOOR TEMPERATURE TREND INDICATOR

Each outdoor temperature has a trend indicator to represent the trend of the outdoor temperature. When the indicator points upwards, it means that the outdoor temperature is rising. When indicator points downwards means the outdoor temperature is falling.

OUTDOOR TEMPERATURE 1, 2, 3, 4, AND 5

If the more than one transmitter is being used, to alternate between the temperature readings of transmitter 1, 2, 3, 4, and 5 simply press the "RESET" key. If the reading is from transmitter 1, then the identification numbers 1 will be displayed in the outdoor temperature section of the LCD. The same will apply to the next transmitter and so on. However, if only one transmitter is used, no identification number will be displayed on the LCD.

CHECKING FOR 433 MHz RECEPTION:

In normal surroundings (for example away from interfering sources such as TV sets), the outdoor temperature can usually be easily received within 2-1/2 minutes after initial setting up. If the outdoor temperature is not displayed on the LCD after 2-1/2 minutes, then check the following:

1. The distance of the units 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 doors, window frames or structures.
3. Using other electrical products such as headphones and speakers that operate on the same signal (433 MHz) can prevent the transmission pick up.
4. Neighbours using electrical products operating on the 433 MHz signal can also cause interference. In most severe cases, the reception is only possible once all other electrical products using the 433 MHz are switched off.
5. Within thick concrete rooms such as basements and tower blocks, the 433 MHz signal can be weakened (avoid placing near metal frames and structures).
6. Transmission can be affected by exposure to extreme temperature conditions. For example, if the weather has been extremely cold (under -25ºC) for an extended period of time then the transmission signal may be weakened. (Please bear this in mind when positioning the transmitter).

Note:
Should after checking the above list and the outdoor temperature is still not received, then reset the units (see **Resetting the Remote Thermo** below).

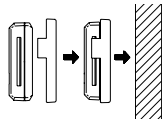
RESETTING THE REMOTE THERMO:

The Remote Thermo and the transmitter(s) need to be reset when one of the following conditions occur:

- Unsuccessful 433MHz signal reception
- Malfunction on the units
- Batteries replacement

For resetting:

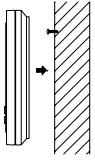
1. Remove the batteries from the Remote Thermo and the transmitter(s)



2. Wait at least 30 seconds and repeat the procedures specified in **Setting up** above.

Note:
Remember when resetting, all units have to be reset and to always insert the batteries into the Remote Thremo first and then followed by the transmitter(s).

POSITIONING



REMOTE THERMO:

The Remote Thermo comes complete with a detachable stand that gives the option of table standing or wall mounting.

To wall mount:

1. Fix a screw into the desired wall, leaving the head extended out the by about 5mm.
2. Using the Remote Thermo's hanging hole, carefully hang it onto the screw.

Note: Always ensures that the unit locks onto the screw head before releasing.

OUTDOOR TRANSMITTER:

The Outdoor Transmitter is supplied with a holder that may be attached to a wall with the three screws or double-sided tape supplied. To attach to the wall using screws, please follow the steps below:

1. Mark the wall using a pen through the holes in the holder to obtain the exact drilling position.
2. Drill holes in the wall at the points marked.
3. Screw holder onto wall.

The Outdoor Transmitter simply clicks in or out of the holder. When inserting or removing the Outdoor Transmitter to or from the wall holder please hold both units securely to avoid tearing the holder from the wall.

There is also double sided tape included with the wall holder. On smooth surfaces this can be used instead of drilling holes. 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.). Before securing in place, please ensure that the Remote Thermo can receive the 433 MHz signal from the Outdoor Transmitter at the positions that you wish to situate them.

BATTERIES REPLACEMENT & MAINTENANCE:

For best performance, batteries to all units should be replaced at least once a year to maintain optimum running accuracy. Ensure that the batteries used are new of the correct size.

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

CARE AND MAINTENANCE:

- Avoid placing the units in areas prone to vibration and shock as these may cause damage.

- Avoid areas where the units can be exposed to sudden changes in temperature, i.e. direct sunlight, extreme cold and wet/moist conditions as these will lead to rapid changes in temperature which reduces the accuracy of readings.
- When cleaning the LCD and casing, use a soft damp cloth only. Do not use solvents or scouring agents.
- Do not submerge the units into water.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended size.
- Do not make any repairs to the units. Please return them to the original point of purchase for repair by a qualified engineer. Opening and tampering with the units may invalidate its guarantee.

SPECIFICATIONS:

- Temperature measuring range
  - Indoor : 5ºC to +65ºC with 0.1ºC resolution
    (--.- displayed if outside this range)
  - Outdoor : -29.9ºC to +69.9ºC with 0.1ºC resolution
    (--.- displayed if outside this range)
- Temperature checking intervals
  - Indoor temperature : every 10 seconds
    Remote Themo Outdoor
  - Temperature reception : twice in 10 minutes
- Transmitting frequency : 433.92 MHz
- Temperature transmitting : range up to 25 meters
  (Open space and free from interference)
- Power source:
  - Remote Thermo : 2 x AA, IEC LR6, 1.5V batteries
  - Transmitter : 2 x AAA, IEC LR3, 1.5V batteries
- Battery life for both units : Approximately 12 months
  (Alkaline batteries recommended)
- Dimensions (L x W x H):
  - Remote Thermo : 86 x 30 x 144 mm (stand excluded)
  - Transmitter : 59 x 22 x 65 mm (wall bracket excluded)

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 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.