

WIRELESS 868 MHz THERMO-HYGRO-STATION

Instruction Manual

Cat. No. 30.3013.IT

Thank you for choosing this wireless thermo-hygro-station from TFA.

BEFORE YOU USE IT

Please be sure to read the instruction manual carefully.

This information will help you to familiarise yourself with your new device, learn all of its functions and parts, find out important details about its first use and how to operate it, and get advice in the event of faults.

Following the instruction manual for use will prevent damage to the device and loss of your statutory rights arising from defects due to incorrect use.

We shall not be liable for any damage occurring as a result of not following these instructions.

Please take particular note of the safety advice!

Please look after this manual for future reference.

SCOPE OF SUPPLY:

- Thermo-hygro-station (basic unit)
- Outdoor transmitter
- Batteries 5 x AA, IEC LR6, 1.5V
- Instruction manual

FIELD OF OPERATION AND ALL OF THE BENEFITS OF YOUR NEW THERMO-HYGRO-STATION AT A GLANCE:

- DCF Radio controlled time 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 ($^{\circ}\text{C}$) or Fahrenheit ($^{\circ}\text{F}$) 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 receive up to three outdoor transmitters
- Wireless transmission at 868 MHz
- Signal reception intervals at 4 seconds
- Table standing or wall mounting
- Low battery indicator

FOR YOUR SAFETY:

- The product is exclusively intended for the field of application described above. The product should only be used as described within these instructions.
- Unauthorised repairs, modifications or changes to the product are prohibited.
- The product is not to be used for medical purpose or for public information, but is intended solely for home use.



Caution!
Risk of injury:

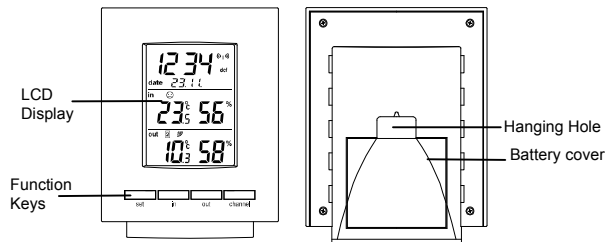
- Keep this instrument and the batteries out of reach of children.
- Batteries must not be thrown into the fire, short-circuited, taken apart or recharged. Risk of explosion!
- Batteries contain harmful acids. Low batteries should be changed as soon as possible to prevent damage caused by a leaking battery. Never use a combination of old and new batteries together or batteries of different types. Wear chemical-resistant protective gloves and glasses when handling leaked batteries.

! Important information on product safety!

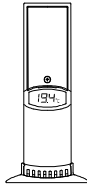
- Do not expose the instrument to extreme temperatures, vibration or shock.
- The outdoor transmitter is protected against splash water, but is not watertight. Choose a shady and dry position for the transmitter.

ELEMENTS

The thermo-hygro-station

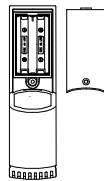


The thermo-hygro transmitter



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

TO INSTALL AND REPLACE BATTERIES IN THE THERMO-HYGRO TRANSMITTER

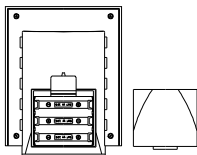


The outdoor thermo-hygro transmitter uses 2 x AA IEC LR6, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Remove the battery cover at the front side with a small screwdriver.
2. Insert the batteries, observing the correct polarity (see battery compartment marking).
3. Replace the battery cover on the unit.

HOW TO INSTALL AND REPLACE BATTERIES IN THE THERMO-HYGRO-STATION

The thermo-hygro-station uses 3 x AA, IEC LR6, 1.5V batteries. 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.

Battery replacement

- Replace the batteries when the battery symbol of the temperature station appears near the indoor data display.
- When the batteries of the transmitter are used up, the low battery icon appears near the outdoor data display.

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 due to a random security code assigned by the transmitter at start-up. This code must be received and stored by the thermo-hygro-station in the first 3 minutes of power being supplied to the transmitter.

SETTING UP:

WHEN ONE TRANSMITTER IS USED

1. First, insert the batteries in the transmitter (see “**How to install and replace batteries in the thermo-hygro outdoor transmitter**” above).
2. Within 2 minutes of powering up the transmitter, insert the batteries in the thermo-hygro-station (see “**How to install and replace batteries in the thermo-hygro-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 this information is 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 thermo-hygro-station will start receiving data signal from the transmitter. The outdoor temperature and humidity data should then be displayed on the thermo-hygro-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 thermo-hygro-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 thermo-hygro-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 thermo-hygro-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 this information is 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 thermo-hygro-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 thermo-hygro-station.

Note: User shall insert the batteries into the second transmitter within 45 seconds after the thermo-hygro-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 thermo-

- hygro-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 thermo-hygro-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 thermo-hygro-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 thermo-hygro-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.

DCF 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 thermo-hygro-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.

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.

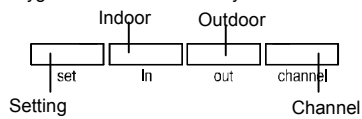
Once the outdoor data reception test period is completed, the DCF tower icon in the clock display will start flashing in the upper left corner. This indicates that the clock has detected that there is a radio signal present and is trying to receive it. When the time code is received, the DCF tower becomes permanently lit and the time 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 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:

Thermo-hygro-station:

The thermo-hygro-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, °C/°F 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)

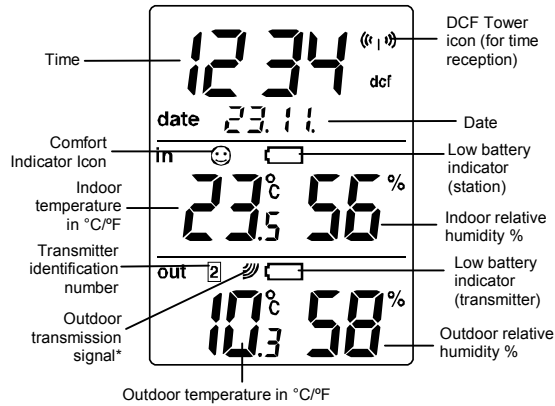
- Used to toggle between the current/ minimum/ maximum outdoor temperature and humidity
- Press for around 3 seconds to reset the outdoor maximum and minimum temperature and humidity records (will reset all records to current level of the relative transmitter being reset- each transmitter's data must 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:

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



* When the signal is successfully received by the thermo-hygro-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.

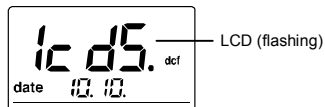
MANUAL SETTINGS

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:

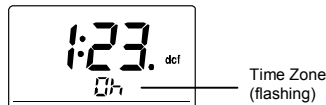
The LCD contrast can be set to 8 different levels (0-7) to suit the user's needs (default LCD contrast setting is LCD 5). To set the desired contrast level:



1. Press and hold SET key. The LCD contrast will start flashing on the LCD.
2. Press the IN key to select the level of contrast desired.
3. 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 thermo-hygro-station is 0. To re-set the time zone:



1. Press the SET key after completing the contrast 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).

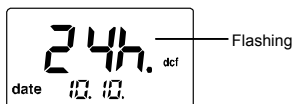


1. The digit "00" will start flashing on the LCD.
2. Use the IN key to turn OFF the time reception function.
3. Confirm with the SET key and enter the **"12/24-Hour display setting"** or exit the setting mode by pressing the CHANNEL key

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

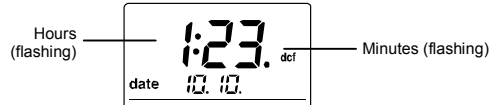
Note:

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 thermo-hygro-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.

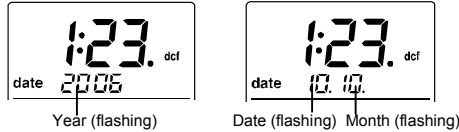


1. Press the SET key until the time display flashes.
2. Use the IN key to set the hours and the OUT key to set the minutes. Pressing these keys continuously moves the hours consecutively by 1 and the minutes consecutively by 5.
3. Press the SET again to confirm and to enter the "Calendar setting" or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

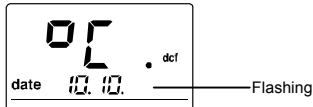
SNOOZE SETTING

Important:

The snooze setting in this thermo-hygro-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.

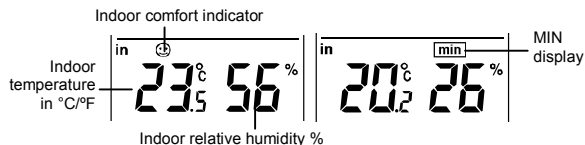
WEATHER FORECASTING ICON SENSITIVITY SETTING

Important:

The weather forecast icon sensitivity setting in this Thermo-hygro-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 RELATIVE HUMIDITY AND INDOOR TEMPERATURE:

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%.

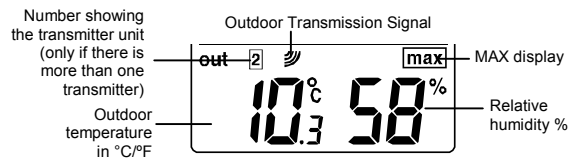
Uncomfortable: A sad face icon "☹" indicating any value outside the comfortable range.

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 TEMPERATURE/HUMIDITY DATA:

The last LCD section shows the outdoor temperature and humidity, the reception indicator, the transmitter identification number and the MIN/MAX outdoor data.



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 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.

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

ABOUT THE OUTDOOR TRANSMITTER

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 positioning the transmitters. Also the batteries may be reduced in power for the thermo-hygro 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 thermo-hygro-station or transmitters should be at least 2 meters away from any interfering sources such as computer monitors or TV sets.
2. Avoid placing the transmitters onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones or speakers operating on the 868MHz-signal frequency may prevent correct signal transmission or reception.
4. Neighbors using electrical devices operating on the 868MHz-signal frequency can also cause interference.

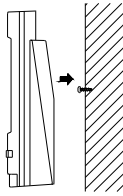
Note:

When the 868MHz signal is received correctly, do not re-open the battery cover of either the transmitter or thermo-hygro-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 thermo-hygro-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 THERMO-HYGRO-STATION

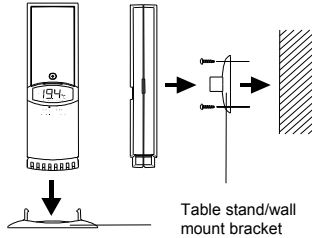
The thermo-hygro-station provides the option of table standing or wall mounting the unit. Before wall mounting, please check that the outdoor data can be received from the desired locations.



To wall mount:

1. Fix a screw (not supplied) into the desired wall, leaving the head extended out by about 5mm.
2. Place the thermo-hygro-station onto the screw, using the hanging hole on the backside. Gently pull the thermo-hygro-station down to lock the screw into place.

POSITIONING THE THERMO-HYGRO TRANSMITTER



The thermo-hygro transmitter can be placed onto any flat surface or wall mounted using the bracket which doubles as a stand or wall mount base.

To wall mount:

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

Note:

Before permanently fixing the remote temperature/humidity sensor wall base, place all units in the desired locations to check that the outdoor temperature and humidity readings are receivable. In event that the signal is not received, relocate the remote temperature/humidity sensor or move them slightly as this may help the signal reception.

CARE AND MAINTENANCE

- Clean the instrument and the transmitter with a soft damp cloth. Do not use solvents or scouring agents. Protect from moisture.

- Remove the batteries if you do not use the product for a lengthy period.

MALFUNCTION

Problems	Troubleshooting
No indication on the thermo-hygro-station	<ul style="list-style-type: none"> • Ensure batteries polarity are correct • Change batteries
No transmitter reception Display "----"	<ul style="list-style-type: none"> • Check batteries of external transmitter (do not use rechargeable batteries!) • Restart the transmitter and thermo-hygro-station as per the manual • Choose another place for the transmitter and/or the thermo-hygro-station • Reduce the distance between the transmitter and the thermo-hygro-station • Check if there is any source of interference
No DCF reception	<ul style="list-style-type: none"> • Time reception setting "ON" • Choose another place for the thermo-hygro-station • Manual time setting • Wait for attempted reception during the night
Incorrect display	<ul style="list-style-type: none"> • Change batteries

WASTE DISPOSAL

This product has been manufactured using high-grade materials and components which can be recycled and reused.

Never throw flat batteries and rechargeable batteries in household waste.

As a consumer, you are legally required to take them to your retail store or to appropriate collection sites according to national or local regulations in order to protect the environment.

The symbols for the heavy metals contained are:



Cd=cadmium, Hg=mercury, Pb=lead



This instrument is labelled in accordance with the EU Waste Electrical and Electronic Equipment Directive (WEEE). Please do not dispose of this product with other household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment, in order to ensure environmentally-compatible disposal.

SPECIFICATIONS:

Recommended operating temperature range : 0°C to 50°C

Temperature measuring range:

Indoor : -9.9°C to +59.9°C with 0.1°C resolution
14.2°F to +139.8°F with 0.2°F resolution
("OF.L" displayed if outside this range)

Outdoor : -39.9°C to +59.9°C with 0.1°C resolution
-39.8°F to +139.8°F with 0.2°F 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:

Thermo-hygro-station : 3 x AA, IEC, LR6, 1.5V
Thermo-hygro transmitter : 2 x AA, IEC, LR6, 1.5V
Battery life cycle : approximately 24 months
(Alkaline batteries recommended)

Dimensions (L x W x H)

Thermo-hygro-station : 106 x 36.3 x 138 mm
Thermo-hygro transmitter: 43 x 23 x 160 mm

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Wertheim

No part of this manual may be reproduced without written consent of TFA
Dostmann. The technical data are correct at the time of going to print and
may change without prior notice.

DECLARATION OF CONFORMITY

Herewith we declare, that this wireless transmission device does comply
with the essentials requirements of R&TTE Directive 1999/5/EC.

A copy of the signed and dated Declaration of Conformity is available on
request via info@tfa-dostmann.de.

www.tfa-dostmann.de

02/12