WIRELESS 868 MHz TEMPERATURE STATION
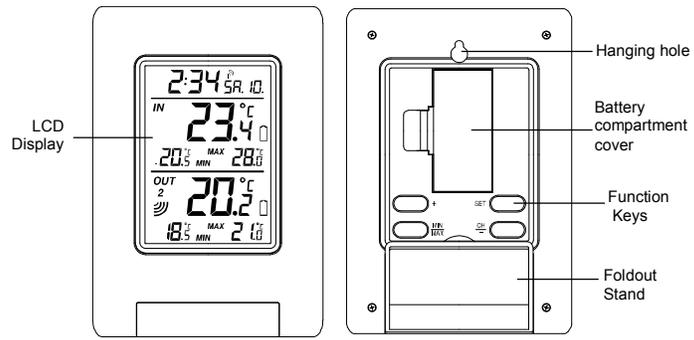### Instruction Manual

INTRODUCTION:
Congratulations on purchasing this compact 868MHz Temperature Station which displays radio controlled time, date, indoor and outdoor temperature. In addition, the daily minimum and maximum indoor and outdoor temperature are shown in the normal display. With only two keys, this product is ideal for use in the home or office.


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FEATURES:
The Temperature Station

LCD
Display

Hanging hole

Battery
compartment
cover

Function
Keys

Foldout
Stand

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- Atomic Time function (DCF-77 Radio controlled time) or manual time setting options
- Atomic Time reception On/Off
- Hour and minute display
- Calendar display
- Time zone option (12 hours
- Wireless transmission at 868 MHz
- Outdoor signal reception intervals at 4-second
- Temperature display in degrees Celsius (°C) or Fahrenheit (°F) selectable
- Indoor and Outdoor temperature display with MIN/MAX recording (records can be reset)
- Can receive up to 3 outdoor transmitters
- Daily minimum and maximum indoor temperature display
- Daily minimum and maximum outdoor temperature display
- Low battery indicator
- LCD contrast adjustable
- Table standing/ Wall mounting

The Outdoor Temperature Transmitter
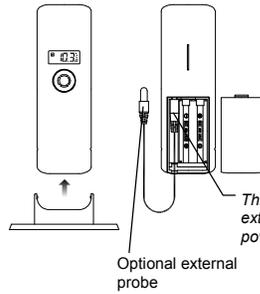
- Remote transmission of outdoor temperature to Temperature Station by 868 MHz signals
- Dual channel transmitter*: one internal channel and one probe channel
- Shower proof casing
- Wall mounting and table stand

This socket is only for the external probe. Do not apply power plug to it.

Optional external probe

*DUAL CHANNEL TRANSMITTER -
There are an internal channel and an external probe channel in the transmitter.
The data measured by the internal sensor and the measuring probe will be shown on the transmitter's display as Channel "1" and "2" respectively. The two readings will be

automatically toggled to display. However, if the probe is unplugged, the transmitter' s display will only show the reading from the inner transmitter.

Once the transmitter is successfully recognized by the temperature station, Channel 1 of the Temperature station will display the temperature data measured by internal sensor and Channel 2 will display the temperature estimated by the probe.

If the measuring probe is unplugged, the "probe channel" on Temperature station will show "---", yet the data from the internal transmitter will still be shown on Channel 1 .

The probe can be connected to the remote temperature transmitter anytime after initial setup. There is no need to reset the units, should the probe be unplugged or re-plugged again. The Temperature Station will automatically detect the temperature probe data and will display the temperature data on Channel 2 after the probe is plugged.

SETTING UP:

When one transmitter is used:
1. First, insert the batteries into the transmitter (see "**Install and replace batteries in the Temperature transmitter**" below).
2. Within 30 seconds of powering up the transmitter, insert the batteries to the Temperature Station (see "**Install and replace batteries in the Temperature Station**" below). Once the batteries are in place, all segments of the LCD will light up briefly. Then the indoor temperature and the time as 0:00 will be displayed. If they are not shown on 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 Temperature Station will start receiving data signal from the transmitter.
4. If the optional probe has been plugged to the dual channel transmitter, the outdoor temperature should then be displayed on the Temperature Station on channel 1 and 2. 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.

Note:
Channel 1 will show the reading from the internal sensor of the dual channel transmitter; Channel 2 will show the reading sensed by the probe. If the probe is not plugged to the transmitter, " - -" will be shown on Channel 2.

5. In order to ensure sufficient 868 MHz transmission, the final position between the Temperature Station and the transmitter should not be more than 100 meters (see notes on **"Positioning"** and **"868 MHz Reception"**).
6. Once the remote temperature has been received and displayed on the Temperature Station, the DCF time code reception is automatically started. This takes typically between 3-5 minutes in good conditions—but may take up to 4 nights.

When two transmitters are used
1. User shall remove all the batteries from the Temperature Station and transmitters and wait 60 seconds (if setting has been done with one transmitter before).

2. Insert the batteries into the first transmitter.
3. Within 30 seconds of powering up the first transmitter, insert the batteries into the Temperature Station. Once the batteries are in place, all segments of the LCD will light up briefly. Then the indoor temperature and the time as 0:00 will be displayed. If they are not shown on the LCD after 60 seconds, remove the batteries and wait for at least 60 seconds before reinserting them.
4. The outdoor temperature readings from the first transmitter (Channel 1 and 2) should then be displayed on the Temperature Station (if probe sensor has been installed onto the first transmitter). 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 into the second transmitter as soon as the outdoor temperatures from the first transmitter are displayed on the Temperature Station.

Note: User must insert the batteries into the second transmitter within 30 seconds of reception of the first transmitter.

6. The outdoor temperature reading from the second transmitter will be shown on the LCD and the Channel No. will shift back to "1", indicating that all three channels are running successfully. If this does not happen after 2 minutes, the batteries will need to be removed from all the units and reset from step 1.

Note: After the Temperature Station has successfully received the second transmitter, Channel 3 will display the data measured by the internal sensor of the second dual channel

transmitter. Yet the probe data from the second transmitter will not be displayed on the Temperature Station.

7. Once the remote temperature has been received and displayed on the Temperature Station, the DCF time code reception is automatically started. This takes typically between 3-5 minutes in good conditions—but may take up to 4 nights.

IMPORTANT:
- Transmission problems will arise if the setting for additional transmitters is not followed as described above. Should transmission problems occur, it is necessary to remove the batteries from all units and follow the set-up from step 1.
- If after 10 minutes, the Atomic auto-set time (DCF time) has not been received, press the SET key to manually enter a time initially.
- Daily DCF reception is done at 02:00 and 03:00. If the reception at 03:00 is not successful, then at 04:00 and 05:00 and 06:00 there are other tries, until one is successful. If the reception at 06:00 is still not successful, then the next try takes place at 02:00 next day. (Please refer also to notes on "**DCF-77 Radio Controlled Time**" and "**Manual Time Setting**").

BATTERY INSTALLATION
INSTALL AND REPLACE BATTERIES IN THE TEMPERATURE STATION
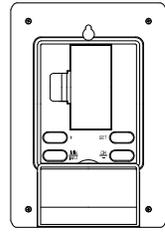
The Temperature Station uses 2 x AAA, IEC LR3, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Remove the cover at the back of the Temperature Station.
2. Insert batteries observing the correct polarity (see marking).
3. Replace compartment cover.

INSTALL AND REPLACE BATTERIES IN THE TEMPERATURE TRANSMITTER

The temperature transmitter uses 2 x AAA, IEC LR3, 1.5V battery. To install and replace the batteries, please follow the steps below:

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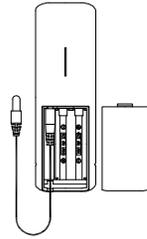
1. Remove the battery compartment cover.
2. Inserte las baterías observando la polaridad correcta.
3. Vuelva a colocar la tapa de la batería en la unidad y asegúrela re-atornillando nuevamente.

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 Temperature Station in the first 3 minutes of power being supplied to it

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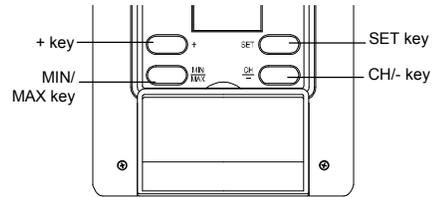
Please participate in the preservation of the environment. Return used batteries to an authorized depot.

FUNCTION KEYS:

Temperature Station:

The Temperature Station has four easy to use function keys.

+ key	SET key
MIN/ MAX key	CH/- key

SET key (Manual Setting):
- Press and hold to enter the setting mode for the following settings: LCD contrast, Time zone, Atomic Time Reception (RCC) ON/OFF, 12/24 hr format, Manual time, Year, Month, Day and °C/°F settings.

MIN/ MAX key
- To toggle between the minimum/ maximum indoor and outdoor temperature records
- Press to exit the setting mode

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- Press to reset the minimum and maximum or temperature records of the indoor and the outdoor channel (will reset all records to current level)
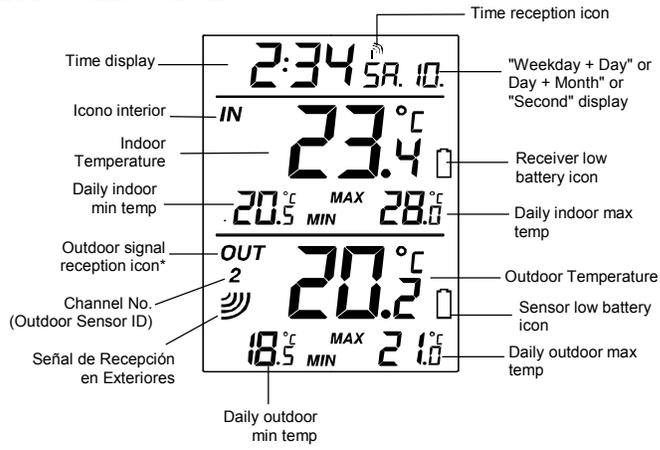
+ key
- To make a "positive" adjustment for various settings
- In normal display, press to toggle between the display of the calendar data and second of time in the time display of LCD

CH/- key
- To make a "negative" adjustment for various settings
- To toggle between different outdoor channel display (when more than 1 outdoor transmitter is adopted)

LCD SCREEN AND SETTINGS:

Time reception icon

Time display

"Weekday + Day" or Day + Month" or "Second" display

Icono interior

IN

Indoor Temperature

23.4 °C

Receiver low battery icon

Daily indoor min temp

20.5 °C MAX MIN **28.0** °C

Daily indoor max temp

Outdoor signal reception icon*

OUT 2

20.2 °C

Outdoor Temperature

Channel No. (Outdoor Sensor ID)

Sensor low battery icon

Señal de Recepción en Exteriores

18.5 °C MAX MIN **21.0** °C

Daily outdoor max temp

Daily outdoor min temp

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*When the outdoor signal is successfully received by the temperature station, this icon will be switched on. (If not successful, the icon will not be shown in LCD) So user can 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.

Note:
The Channel No. (Outdoor Transmitter No.) will be shown when more than one outdoor transmitter is adopted.

For better distinctness the LCD screen is split into 3 sections displaying the information for time and date, Indoor data and outdoor data.

Section 1 - TIME AND CALENDAR
- In normal mode, display the time and "weekday + day". Press the + key once to display the "day + month"; twice to display the second of time.
- A signal reception symbol is shown indicating that Atomic auto-set time (DCF time) signal is received.

Section 2 - INDOOR TEMPERATURE
- Display current indoor temperature
- Display daily minimum and maximum indoor temperature

Section 3 - OUTDOOR TEMPERATURE
- Display current outdoor temp
- Display daily maximum and minimum outdoor temperature

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 (Temperature) 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 1,500 km radius around Frankfurt.

Once the outdoor temperature is displayed on the station after initial set-up, 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 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.

MANUAL SETTINGS:

The following manual settings can be done in the setting mode:
- LCD Contrast setting
- Time zone setting
- Atomic Time reception ON/OFF setting (RCC)
- 12/24 hour time format setting
- Manual time setting
- Calendar setting (Year, Month, Date)
- °C/ °F temperature unit setting

Press and hold the SET key for about 3 seconds to advance to the setting mode:

LCD CONTRAST SETTING

lc d4 —— flashing

The LCD contrast can be set to 8 different levels (0 to 7) to suit the user's needs (default LCD contrast setting is LCD 4). To set the desired contrast level:
1. The above display will be seen. Press the + key or CH/- key to select the level of contrast desired.
2. Press the SET key to confirm and enter the "Time Zone setting" or exit the setting mode by pressing the MIN/MAX key

TIME ZONE SETTING:

flashing —— **0h**

The time zone default of the Temperature Station is 0 hr. To change to another time zone:
1. Using the + key or CH/- key, set the time zone. The range runs between -12 to +12 hour.
2. Press the SET key to confirm and enter the **"Time reception On/Off setting"** or exit the setting mode by pressing the MIN/MAX key.

TIME RECEPTION ON/OFF SETTING

flashing —— **ON** RCC

In area where reception of the atomic time is not possible, the time reception function can be turned OFF. The clock will then work as a normal Quartz clock. (Default setting is ON).
1.   The digit "ON" and the time reception icon will start flashing on the LCD.
2.   Use the + key or CH/- 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 MIN/MAX 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

24h —— flashing

1. After setting time reception ON/OFF, press the SET key, "12 h" or "24 h" flashes in the LCD. (default 24 h)
2. Press the + key or CH/- to select the "12 h" or "24 h" display mode.
3. Press the SET again to confirm and to enter the **"Manual Time setting"** or exit the setting mode by pressing the MIN/MAX key.

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

MANUAL TIME SETTING

In case the Temperature Station is not able to detect the Atomic time (DCF) signal (disturbances, transmitting distance, etc.), the time can be manually set. The clock will then work as a normal Quartz clock.

TIME

Hours (flashing) ———— 12 : 34 ———— Minutes (flashing)

To set the clock:
1. The hour digits start flashing in the time display section.
2. Use the + key or CH/- key to adjust the hours and then press SET key to go to the minute setting.

3. The minute will be flashing. Press the + key or CH/- key to just the minutes.
4. Confirm with the SET key and enter the **"Calendar Setting"** or exit the setting mode by pressing the MIN/MAX key.

CALENDAR SETTING

DATE

20 06 ——Year

DATE

2. 1.

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

The date default of the temperature station is 1. 1. of the year 2006 after initial set-up. 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. To do this:
1. The year is flashing. Using the + key or CH/- key, set the year required. The range runs from 2006 to 2029 (default is 2006).
2. Press the SET key to enter the month setting mode.
3. The month digit will be flashing. Press the + key or CH/- key to set the month and then press the SET key to go to the day setting.

4. The day digit will be flashing. Press the + key or CH/- key to set the day.
5. Confirm with SET key and enter the "**°F/°C TEMPERATURE UNIT SETTING"** or exit the setting mode by pressing the MIN/MAX key.

Note: The weekday of calendar will be automatically set after the month and day value is input.

°C/°F TEMPERATURE UNIT SETTING

°C ———————— flashing

The default temperature reading is °C (degree Celsius). To select °F (degree Fahrenheit):
1. The "°C" or "°F" will be flashing, use the + key or CH/- key to toggle between "°C" and "°F".
2. Once the desired temperature unit has been chosen, confirm with the SET key to exit the setting mode.

DISPLAY OF INDOOR TEMPERATURE READING:
The indoor temperature is measured and displayed on the second section of the LCD.

Indoor Icon ——— *IN* **23.4** °C — Indoor Temperature

20.5 °C **MAX 28.0** °C
MIN

DISPLAY OF OUTDOOR TEMPERATURE READING:

Outdoor icon ——— *OUT* **20.2** °C — Outdoor Temperature
2

Identification number of the transmitter

18.5 °C **MAX 21.0** °C
MIN

The bottom LCD section shows the outdoor temperature and the transmitter number.

DISPLAY OF INDOOR MINIMUM AND MAXIMUM RECORDS:
1. In normal display mode, press the MIN/MAX key once, the minimum indoor temperature will be shown in LCD. Also the time and date of recording this temperature will be displayed.

12:34 2. 1. ——— Time and date of record

Indoor icon ——— *IN*

Minimum indoor ——— *18.0* °C *MIN*
temp recorded

2. Then press the MIN/MAX button one more time, the maximum indoor temperature will be shown in LCD. Also the time and date of recording this temperature will be displayed.
3. Press three more time the MIN/ MAX button to go back to the normal display.

DISPLAY OF OUTDOOR MINIMUM AND MAXIMUM RECORDS:
1. In normal display mode, Press the MIN/MAX button three times, the outdoor minimum temperature and the time and date of recording this temperature will be displayed.

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2. Press the MIN/MAX button once more, the outdoor maximum temperature and the time and date of recording this temperature will be displayed

$12{:}31$ 2. 1. —— Time and date of record

Outdoor icon —— OUT

Outdoor —— 2
Channel No.

MAX 30.5 °C —— Maximum outdoor temp recorded

3. Press one more time the MIN/ MAX button to go back to the normal display.

RESETTING THE INDOOR AND OUTDOOR MINIMUM /MAXIMUM RECORDS
1. In normal display mode, press the MIN/MAX button once to advance to the indoor MIN temp display.

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2. Press and hold the MIN/MAX key for about 3 seconds, this will reset the currently shown indoor and outdoor minimum and maximum data to the current time, date and temperature.
3. Then press the MIN/MAX button three more times to return to the normal display.

Note: The indoor minimum and maximum record, as well as the minimum and maximum records of all outdoor channels, will be reset at the same time.

DAILY INDOOR MIN AND MAX TEMPERATURE DISPLAY
This temperature station shows the daily minimum and maximum indoor temperature in normal display.

Note:
- The MIN/MAX indoor temperature resolution is 0.5ºC.
- The daily minimum temperature record is reset automatically at 8:00 pm and the daily maximum temperature is reset automatically at 8:00 am every day.

DAILY OUTDOOR MIN AND MAX TEMPERATURE DISPLAY

This temperature station also displays the daily minimum and maximum outdoor temperature for each outdoor channel in normal display.

To view the daily MIN and MAX temperature of another channel, user shall press the CH key to shift to various channel display.

Note:

- **The MIN/MAX outdoor temperature resolution is 0.5ºC**
- The daily minimum temperature record is reset automatically at 8:00 pm and the daily maximum temperature is reset automatically at 8:00 am every day.

868 MHz RECEPTION

The Temperature Station should receive the temperature data within 5 minutes after set-up. If the temperature data is not received 5 minutes after setting up (not successfully

continuously, the outdoor display shows "- - -"), please check the following points:
1. The distance of the Temperature Station or transmitter should be at least 1.5 to 2 meters away from any interfering sources such as computer monitors or TV sets.
2. Avoid positioning the Temperature Station onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones or speakers operating on the same signal frequency (868MHz) may prevent correct signal transmission and reception.
4. 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 Temperature 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 Temperature 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**).

MOUNTING
POSITIONING THE TEMPERATURE STATION:
The Temperature Station is designed to be hung onto wall or free standing.
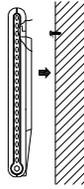
To wall mount
Choose a sheltered place. Avoid direct rain and sunshine. Before wall mounting, please check that the outdoor temperature values can be received from the desired locations.
1.   Fix a screw (not supplied) into the desired wall, leaving the head extended out the by about 5mm.
2.   Remove the stand from the Temperature Station by pulling it away from the base and hang the station onto the screw. Remember to ensure that it locks into place before releasing.
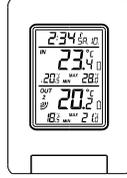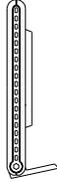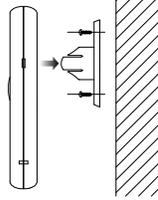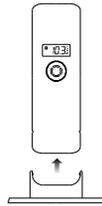
Free standing
With the stand, the Temperature Station can be placed onto any flat surface.

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 transmitter 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

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signal reception.

CARE AND MAINTENANCE:
- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the unit and give inaccurate forecasts and readings.
- When cleaning the display and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCD and casings.
- Do not submerge the unit in water.
- 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 unit. Return them to their original point of purchase for repair by a qualified engineer. Opening and tampering with the unit may invalidate their guarantee.
- 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   :   0ºC to +59.9ºC with 0.1ºC resolution
(32°F to +139.8°F with 0.2°F resolution)
"OF.L" displayed if outside this range

Outdoor :   -39.9ºC to +59.9ºC with 0.1ºC resolution
                 (-39.8°F to +139.8°F with 0.2°F resolution)
                 "OF.L" displayed if outside this range

Indoor temperature checking interval : every 15 seconds

Outdoor data reception   :   approximately every 4 seconds

Power consumption:

Temperature Station   :   2 x AAA, IEC, LR3, 1.5V

Temperature Transmitter   :   2 x AAA, IEC, LR3 1.5V

Battery life (Alkaline batteries recommended)

Temperature Station   :   Approximately 12 months

Temperature Transmitter   :   Approximately 12 months

Dimensions (L x W x H)

Temperature Station   :   95 x 18.8 x 136 mm

Temperature Transmitter   :   41 x 19 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 and other weather data.
- 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.

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.

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
06/12