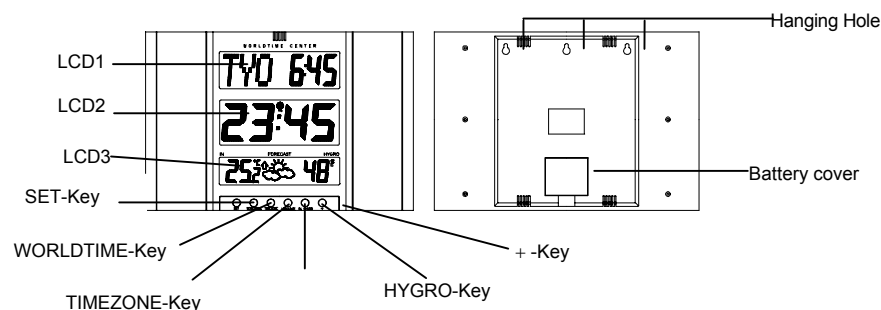


World Time Center

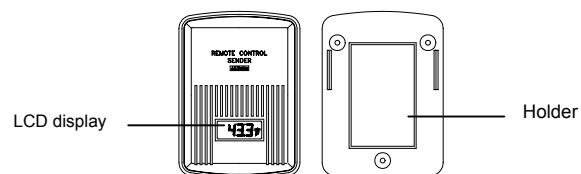
Introduction

Congratulations on purchasing this state-of-the-art World Time Center as an example of superior design and engineering. Providing radio controlled time, indoor temperature and humidity displays, outdoor temperature, this unit will never keep you guessing on time, date or current and future weather conditions. Operation of this product is simple and straightforward. By reading this operating manual, the user will however receive a better understanding of the WorldTime Center together with the optimum benefit of all its features.

World Time Center



Outdoor temperature sensor



Features

World Time Center

- 4 digits showing Hour and Minute in the main display
- WWVB time signal radio-controlled clock with manual time display
- 12/24 hour display
- Time zone selectable
- World time display with specific place represented by 3 successive characters
- Calendar display
- Display of weekday (8 languages to choose from)
- Display of current indoor temperature
- Display of current indoor relative humidity
- Three weather icons for weather forecasting
- Weather tendency indicators
- °C or °F temperature display selectable
- LCD contrast changeable to 8 different tones
- Low battery indicator
- Wall Mounting

Outdoor temperature sensor

- Remote transmission of outdoor temperature via 433MHz to base World Time Center.
- LCD display showing current outdoor temperature in Fahrenheit (°F)
- Shower proof casing
- Wall mounting case

Getting started

Remove all parts from the packaging and place onto a table in front of you. Ensure that the following parts are included:

1. World Time Center (main unit)
2. Outdoor temperature sensor
3. Instruction manual

If any one of the above mentioned parts is missing please contact your supplier.

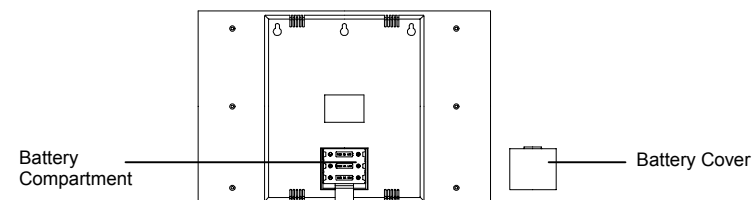
Please follow all further explanations and descriptions in this manual in order to ensure that your World Time Center and Outdoor temperature sensor work correctly.

Important Note:

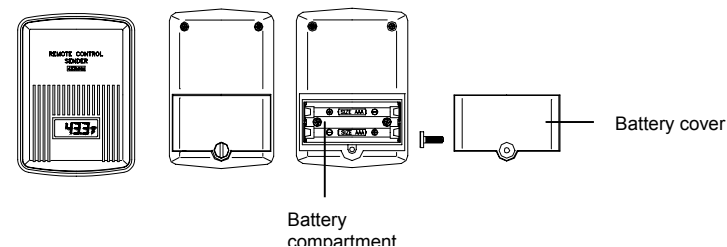
For all users wanting to get additional informations on the function of the World Time Center there is an alphabetically sorted subject index at the end of this manual offering a number of technical and functional explanations. For use and operation of this product however the knowledge of this index is not necessary.

Putting into Operation

Basic Setup



1. Open the battery cover of the World Time Center and - checking the correct polarities – insert 3 x AA, IEC LR6 1.5V batteries into the battery compartment as indicated above and replace the cover.



2. Unscrew the screw on the back of the Outdoor temperature sensor compartment and remove the cover.
3. Insert the 2 x AAA, IEC LR3, 1.5V batteries observing correct polarity.
4. Replace battery cover on unit and seal by re-screwing
5. When replacing the battery covers, ensure that the batteries do not spring free from the contacts.
6. Your World Time Center and Outdoor temperature sensor are now operational.

Reset

To reset the World Time Center and the Outdoor temperature sensor, simply take out the batteries from both unit. Wait for at least 30 seconds and repeat the setup procedure above.

Important!

After putting into operation (basic setup or reset) all key functions except for the “SET” and the “+” keys should not be operated until the WWVB time signal has been received or the time is manually set.

Self Programming after Basic Setup or Reset (Putting into Operation)

After the the batteries are inserted (see “**Putting into Operation**”) into World Time Center and a self programming sequence will start which cannot be influenced by the user. At first all segments in the LCD will light up for appr. 3 seconds. Next, the unit will perform a battery test followed by the measurements of indoor temperature and humidity, air pressure and a scanning of the WWVB time signals. After this starting phase the indoor temperature (Left on LCD 3) will be displayed along with the displays “- - -” in the weekday, time (LCD 1), WWVB time (LCD 2) and outdoor temperature/humidity sections (Right on LCD 3). If measurements and signal receptions are successful, the dashes will be updated one by one by the real values measured and received.

Initial Displays

If the “**SET**” key is pressed **after** “- - -” is displayed (as described in 7.1), but **before** the real measurements are displayed, the learning mode will be terminated. Apart from the temperature already displayed on LCD 3 the following initial displays will now be assigned to the various sections on the LCD:

- Date (LCD 1) “**MON 1.1.98**”
- Time of day (LCD 2) “**0:00**”

If selected:

- Worldtime location (LCD 1) “**- - -**”
- Worldtime (LCD 1) “**0:00**”
- Time zone (LCD 2) “**0**”

Further default values:

Display modes

- Time: 24 hours
- Temperature: °F (degrees Fahrenheit)
- Language for weekday display: GB (English)
- LCD Contrast: Level 5

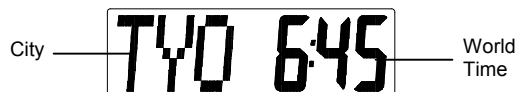
Note:

After completion of the self programming procedure check that all frequency signals are correctly received and displayed in the appropriate sections of the LCD screens. Should any one signal not be received, then see Items “**WWVB Reception Check**” below before performing a reset (see **Reset** above).

LCD Screens

The LCD of your World Time Center consists of three separate screens which provide - from top to bottom - the following information:

LCD 1 - Worldtime and Date/Weekday



- In normal mode display of current date (Day and Month. Year will only show in programming mode) with current weekday (abbreviated to 3 letters; 8 languages to choose from).
- By key stroke display of radio controlled, highly accurate worldtime at any location on earth (identified by 3 letter abbreviation).
- By key stroke alternating display of both above modes every 5 seconds.

LCD 2 - Time of Day



- In normal mode display of radio controlled, highly accurate time of day depending on programming - 12 or 24 hours mode.
- A transmission tower symbol in the upper center of the display indicates that the WWVB time signal is scanned for (flashing) or received (steady).
- A battery symbol in the lower center indicates low running batteries.

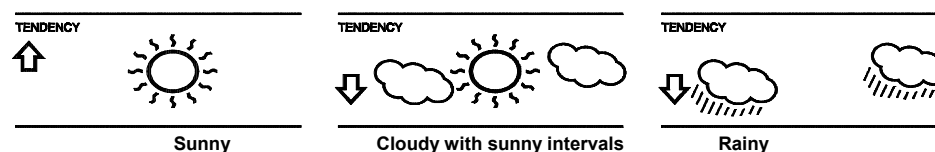
LCD 3 - Temperature/Indoor Humidity and Weather Forecast



- On the left, display of current indoor temperature.
- On the right, display of current outdoor temperature and by pressing the “Hygro” key, alternate between
 1. the indoor relative humidity,
 2. indoor relative humidity and outdoor temperature, and
 3. outdoor temperature
- In the center, the display shows the expected weather in the form of three weather symbols and weather tendency indicator in the form of an arrow.
- In normal mode display on the right shows the current indoor humidity.

Weather Symbols:

The weather symbols will in the following combinations provide a weather forecast upon reading any sudden changes in air pressure:



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 various areas it has been designed to be used in.

Weather Tendency Indicators :

The weather tendency indicator arrows are located to the left and right of the weather symbols. They indicate the air pressure development and thus, also provide a forecast of the weather to be expected. The tendency arrows can be displayed as follows:

- **Tendency arrow pointing upwards:**
This means that the air pressure is increasing and 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.

Function Keys

SET Key

- Serves in normal mode to enter the programming mode and - once in programming mode - the selection of the various setting modes as well as the acknowledgements of the selected values.

WORLDTIME Key

- Serves the selection of the displays of current date with weekday, worldtime with location or alternating display of both above modes every 5 seconds on LCD 1.

TIMEZONE Key

- Serves to enter the time zone change mode. The preset time zone on LCD 2 will start flashing. By use of the **+** key the time zone can now be selected (± 12 hours). Alter the time zone to Hawaii (HAW, -10), Alaska (ALA, -9), Pacific (PST, -8), Mountain (MST, -7), Central (CST, -6), Eastern (EST, -5; default time zone), Atlantic (AST, -4) and Greenwich Mean Time (GMT, 0). To acknowledge the selected value and to exit this setting mode and return to normal display mode, press the **SET** key or wait appr. 15 seconds for an automatic switch back.

LANGUAGE Key

- Serves to enter the selection mode for the one language by which the weekday is to be displayed on LCD 1. Selection takes place by use of the **+** key from following languages:

D	German
GB	English
F	French
I	Italian
NL	Dutch
DK	Danish
E	Spanish
J	Japanese

To acknowledge the selected language and to exit this setting mode and return to normal display mode, press the **LANGUAGE** key or wait appr. 15 seconds for an automatic switch back.

HYGRO Key

- Serves to select humidity and outdoor display. Pressing of the key will subsequently switch the display to the next mode.
 - Indoor relative humidity
 - Indoor relative humidity / Outdoor temperature
 - Outdoor temperature

+ Key

- Serves in programming mode the change/selection of all changeable/selectable values and displays.

Manual programming

Note:

If the World Time Center has already successfully received the WWVB time signal and displays the correct time and date, then the Manual programming can be omitted.

After completion of the above described procedures in **"Basic Setup"** the manual programming mode can be entered by pressing the **SET** key for about 2 seconds. The following settings can now be programmed:

- 12/24 hour setting
- Time setting
- Weekday setting
- Month setting
- Date setting
- Year setting
- World Time location setting
- World Time setting
- °C or °F setting
- LCD contrast setting

Note:

If in programming mode no key is pressed for appr. 15 seconds then the LCD will switch back to the normal display mode.

12/24 Hours Setting

After entering the programming mode as described above the 12/24 hours display can be selected on LCD 2 in the following way:

- The **"12h"** or **"24h"** will start flashing (Default setting 12h). Select the desired time display mode by use of the **+** key.
Note:
In 12 hours mode the date will be displayed in the configuration **"Weekday / Month / Day"**, in 24 hours mode in **"Weekday / Date / Month"**.
- Press the **SET** key to enter the **"Time Setting"**.

Time Setting

- The hour digits will start flashing on LCD 2. Set the desired hours by pressing the **+** key followed by pressing the **SET** key.
- Now the minute digits will start flashing. Set the desired minutes by pressing the **+** key followed by pressing the **SET** key to move to the **"Weekday Setting"**.
Note:
In 12 hours mode the time will be displayed with an additional **"PM"** for the time from 12:00 noon until 11:59.

Weekday Setting

- The weekday symbols will be displayed on LCD 1 in the preset language and flashing. Set the desired weekday by use of the **+** key.
- Press the **SET** key to enter the mode **"Month Setting"**.

Month Setting

- The month digits on LCD 1 will start flashing. Set the desired month by use of then **+** key.
- Press the **SET** key to move to the mode **"Date Setting"**.

Date Setting

- The digits for the date will start flashing on LCD 1 (Default setting 1). Set the desired date by use of the **+** key.
Note:
The date can only be set in conjunction with the selected month. I.e., it is not possible to set the date 30 if the month of February is selected.
- Press the **SET** key to enter the mode **"Setting of Year"**.

Year Setting

- The year digits will start flashing on LCD 1 (Default setting 1998). Select the desired year by use of the **+** key.
Note:
The year can be selected sequentially from 1998 to 2020 and will then start over again. The year furthermore will only be visible on the display of LCD 1 in programming mode.
- Press the **SET** key to switch to the mode **"Worldtime Location Setting"**.

Worldtime Location Setting

- The dash representing the first character of the worldtime location (Default setting - - -) on LCD 1 will start flashing. Select the desired character by use of the **+** key.
- Press the **SET** key to move to the second character.
- The second dash will start flashing. Select the desired character by use of the **+** key.
- Press the **SET** key to switch to the third character.
- The third dash will start flashing. Select the desired character by use of the **+** key.

Note:

For designation of the worldtime location the characters **"A"** through **"Z"** and **"0"** as well as **"."** and **" "** (Space) can be chosen.

- Press the **SET** key to move to the mode **"World Time Setting"**.

World Time Setting

1. The hour digits of the worldtime on LCD 1 will start flashing. Select the desired hour by use of the “+” key. Setting of minutes is neither possible nor necessary.
2. Press the “SET” key to move on to the “ °C/°F Setting”.

°C/°F Setting

1. The temperature displays including the characters “°C” or “°F” will start flashing on LCD 3 (Default setting °F). By use of the “+” key select “°C” for temperature display in degrees Celsius or “°F” for degrees Fahrenheit.
2. Press the “SET” key to move to the mode “LCD Contrast Setting”.

LCD Contrast Setting

1. The word “LCD 5” will be flashing on LCD 1. This is the manufacturer's default setting.
2. Using the “+” key choose the most convenient contrast (0 - 7 contrast levels) for the location of the World Time Center.
3. Press the “SET” key to exit the programming mode and switch back to the normal display mode.

Leaving the Programming Mode

- To return to the normal display mode from anywhere in programming mode simply press any desired key **but** the “SET” or the “+” key at any time.
- If no keys are pressed for at least 15 seconds in programming mode, the Wallclock Weather Station will automatically switch back to normal display mode.

Reset of all Data

By removing the batteries from both World Time Center and Temperature sensor all displayed data will be lost. To reset all data perform a basic setup as described in “Reset” above.

Data Reception

Criteria for Reception

For reception and computing of displayed values, the software of the World Time Center performs a number of comprehensive operations (see **Index**) which are not necessarily important for the user to know. In case the time is not correctly displayed on LCD 2, then please see “**WWVB Reception Check**”.

WWVB-Signal Test

The World Time Center will automatically start scanning for the WWVB frequency signal (time signal transmission) after the batteries are inserted. In normal surroundings (i.e. at a safe distance from interfering sources such as TV sets), it takes between 3 to 5 minutes to receive the signal. If after 10 minutes of inserting the batteries the WWVB signal is not properly received then check the following list before manually setting the time (see “**Time Setting**”) in programming mode.

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 window frames.
4. Within thick concrete rooms such as basements and tower blocks, the WWVB frequency signal is naturally weaker for reception. In extreme cases, place the unit closer to a window and/or point its front or rear towards the general direction of NIST Radio Station WWVB in Ft. Collins, Colorado (again avoid placing near metal frames or structures).

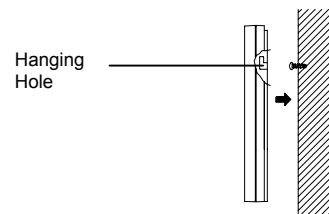
Note:

Users may be located in areas where atmospheric disturbances are the immediate cause for not receiving the WWVB frequency signal. During nighttime, atmospheric disturbances are usually less severe and reception is possible in most cases. With a single daily reception, it is adequate for the World time Center to keep time accuracy deviation to below 0.5 seconds in a period of 24 hours.

When reception is successful, the WWVB transmission tower icon will start flashing in the upper center of LCD 2 as a sign that the signal has been located and is about to be received. Once the signal has been locked, the WWVB tower icon will stay fixed on the LCD and the received time will then update and correct the manually set time.

Positioning

Positioning of World Time Center

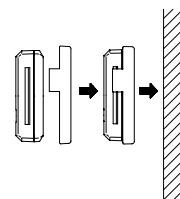


The World Time Center has been designed to be hung on a wall. To mount please do the following:

1. Fix a screw (not supplied) into the desired wall, leaving the head extended out the wall by about 5 mm as indicated above.
2. Using the World Time Center's hanging hole on the back of the unit, carefully hang it onto the screw. Always ensure that the product securely locks onto the screw head before releasing.

Positioning of the Outdoor temperature sensor

The Outdoor temperature sensor has a holder and is supplied screws and double sided tape for affixing by method of sticking or by screw. Before securing the transmitter to the desired location, **check that the temperature can be received first.**



To affix by screw, follow these steps:

1. Using the holes in the holder as a guide, mark the holes on the drilling surface.
2. Drill the marked area to the required depth
3. Screw the holder onto wall and click the transmitter into holder

To affix using double sided tape, follow these steps:

1. Peel one side of the tape and press it firmly against the back of the holder
2. Now peel the other side of the tape and stick the holder firmly onto the surface. Do not stick onto bricks, enamel finished or greasy surfaces.

Note:

Users are recommended to check that the WWVB time signal or temperature from the transmitter is properly received before permanent standing, hanging or mounting of World Time Center. Should the World Time Center not pick up the signal from the desired location, then relocate slightly. Once the signal is received, mount your system units permanently.

Important Notes

- Avoid placing the World Time Center where it can be exposed to sudden changes in temperature, i.e. direct sunlight, extreme cold and wet/moist conditions since the design of this product is for indoor use only. This will help to avoid any inaccurate readings and any possible damage to the unit.
- Should the World Time Center be exposed to extreme and sudden temperature changes, it will lead to rapid changes in its readings and thereby reduce its accuracy.
- Should the World Time Center be moved to another location that is significantly higher or lower than its initial standing point (e.g. from the ground floor to the upper floors of a house), then inaccurate readings may occur. In such a case either reset the units or discard the readings of the weather forecast for the next 12 to 24 hours. By doing so, this will allow sufficient time for operation at a constant altitude, thus enabling a more accurate forecast.
- The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should any inaccurate reading take place.
- This product is not to be used for medical purposes or for public information.
- This product has been designed for strict use in the home as an indicator of the future weather and is not 100% accurate. Weather forecast 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.

Care and Maintenance

- Avoid placing the units in places prone to extreme temperatures, vibration and shock as these may cause damage and inaccurate readings.
- When cleaning the World Time Center and Temperature Sensor's displays and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCDs and casing.
- 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 size.
- Do not make any attempts to repair 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.

Battery Change

For best performance, batteries to all units should be replaced when the low battery indicator is displayed on the LCD of the World Time Center and the Outdoor temperature sensor or at least once a year to maintain maximum running accuracy.



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

Specifications

Radio controlled time signal	:	WWVB
Recommended operating temperature	:	
World Time Center	:	0°C to +50°C
LCD contrast	:	8 levels
Temperature measuring range	:	
Indoor	:	+14°F to +158°F with 0.2°F resolution (-9,9°C to +59,9°C with 0.1°C resolution) ("OFL" displayed if outside this range)
Outdoor	:	-22°F to +158°F with 0.2°F resolution (-29,9°C to +69,9°C with 0.1°C resolution) ("OFL" displayed if outside this range)
Relative indoor humidity range	:	19% to 96% with 1% resolution (Display "--" if outside this range)
Data checking intervals	:	
Indoor Temperature	:	Every 20 seconds
Indoor Humidity	:	Every 1 minute
Outdoor temperature	:	Every 10 seconds
Power Supply	:	
World Time Center	:	3 x 1.5V Battery Typ AA, IEC LR6
Temperature Sensor	:	2 x 1.5V Battery Typ AA, IEC LR3
Dimensions (L x W x D)	:	
World Time Center	:	375 x 30 x 250mm
Temperature Sensor	:	56 x 24 x 80mm

Liability Disclaimer

Subject Index

Here the interested user will find a number of additional informations regarding the function of this Wallclock Weather Station. Their knowledge however is not necessary for efficient operation of this system.

Clock, Radio Controlled

The time base for radio controlled time and date is a operated by the NIST radio station WWVB in Ft. Collins, Colorado. WWVB broadcasts are used by millions of people throughout the United States to synchronize electronic products like clocks, clock radios and wristwatches. WWVB continuously broadcasts time and frequency signals at 60kHz and the time information received and displayed is absolutely accurate regardless of summer or wintertime.

Software Operations

- **WWVB Time Signal**
Every full hour, after every setup or reset and after leaving the programming mode the software of the World Time Center will start a reception of the WWVB time signal.
- **Indoor Temperature and Humidity/Air Pressure**
The software of the World Time Center will perform measurements of the current indoor temperature every 20 seconds, the current indoor humidity every 1 minute and the current air pressure every 1 minute. In programming mode and while any one key is pressed no WWVB reception will take place.
- **Battery**
After setup, reset or after every outdoor data reception a low-battery detection is started by the software of the World Time Center. If the batteries run low, a low battery indication flag is shown on the display.

Weather Symbols

For every sudden or definite change in air pressure, the weather symbols will update accordingly to represent this change. This means that the icons will not change if there is no noticable movement in the weather. If the symbols do not change it simply means that either

- 1) the weather has not changed or
- 2) the weather change has been so slow that is has not been possible to read when the actual change had taken place.

The weather icons displayed forecast the future weather in terms of getting better or worse and not necessarily sunny or rainy as each icon indicates. E.g., if the current weather is cloudy and the rain 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 raining.

Weather Tendency

Because of the combination of weather icons and weather tendency arrows, the World Time Center can also show how the weather has changed and is expected to change. E.g., if the tendency arrow pointing downwards is displayed along with the cloud and sun symbols then the last noticeable change in the weather was when it was sunny (sun icon only). This means that the next change in weather will show the rainy icon since the tendency indicator is pointing downwards..

The weather tendency indicator arrow will remain on the LCD regardless of the weather. E.g., if the current weather is raining and the indicator is pointing downwards, it means that the weather will remain poor. If the weather is sunny and the indicator is pointing upwards, it means that the weather is expected to continue being fine.

World Time Center

Operating Manual



THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

1. THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
2. THIS DEVICE MUST ACCEPT INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.