USER MANUAL

MULTI-CHANNEL RF WIRELESS THERMO-CLOCK

Exact one !

CE

ENGLISH

INS-01-W388E-00

Multi-Channel RF Wireless Thermo-Clock

Model No. W388
User Manual

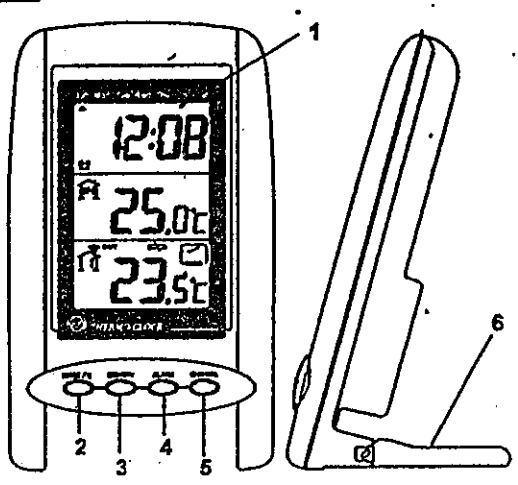
Congratulations on purchasing the Multi-Channel RF Wireless Thermo-Clock (W388). With innovative design and user-friendly functions, it is surely your best choice. The product can measure indoor temperature as well as temperatures in different locations up to 30 meters away from main unit. Up to 3 remote sensors can be installed for one main unit. Other features like real-time clock, calendar and daily alarm are also available. Please read this manual carefully before you use the product.

FEATURES

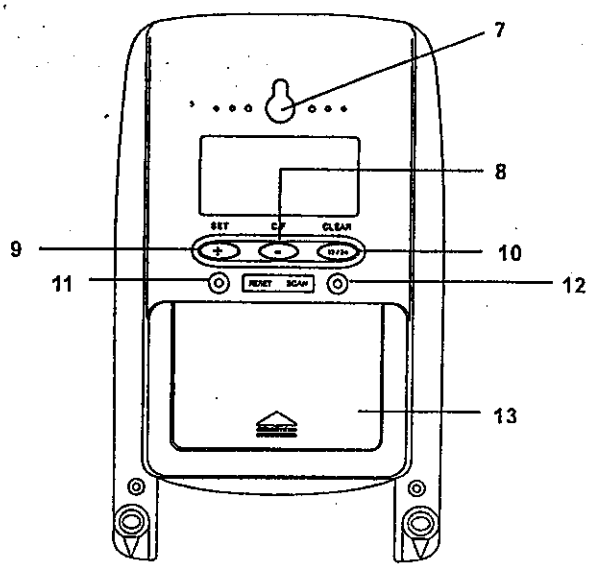
1. Indoor and remote temperatures (max. 3 channels)
2. Max/min temperature memory for both indoor and remote temperatures of main unit
3. Temperature high/low limit alert for both indoor and remote temperatures of main unit
4. Temperature trend indication
5. User selectable Celsius or Fahrenheit reading for main unit
6. Real-time clock with calendar and daily alarm
7. 12/24-hour format for clock display
8. User programmable summer time
9. LED backlight for main unit
10. Splash-proof design for remote sensor
11. Low battery indication for main unit

PART AND KEY DESCRIPTION

Main Unit



1. LCD display
   Shows clock, indoor and remote temperatures
2. MODE/ ☀ button
   To change display mode and to switch on backlight
3. MEMORY button
   To show maximum and minimum temperatures
4. ALARM button
   To enable/disable daily alarm
5. CHANNEL button
   To select channels of remote sensors
6. Movable stand
   To let the unit stand



7. Wall mounting hole

8. C/F/- button
   To select temperature unit or decrease value in setting mode

9. SET/+ button
   To enter setting mode or increase value in setting mode

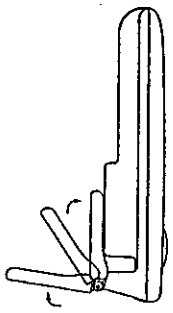
10. CLEAR/12/24 button
    To reset max/min temperature memory or change 12/24-hour format of clock display

11. RESET button
    To reset the whole system

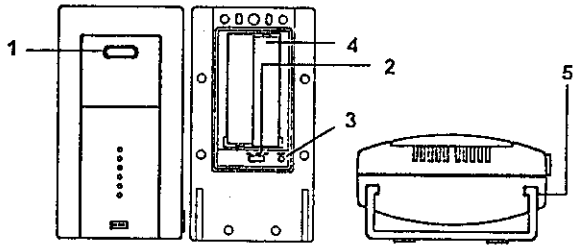
12. SCAN button
    To search and register remote sensors

13. Battery compartment

Note: To mount the main unit on wall, pull and turn the movable stand to the position as shown in the following diagram.



Sensor Unit



1. LED indicator

2. CHANNEL slide switch
   To select channel number

3. RESET button
   To reset sensor unit

4. Battery compartment

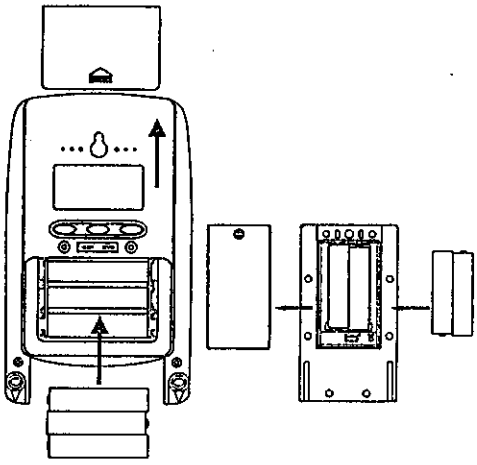
5. Wall mounting bracket

HOW TO SET UP THE UNIT

Battery Installation

The main unit is powered by 3 pcs of "AAA" or UM-4 size 1.5V battery, and the sensor unit is powered by 2 pcs of "AAA" or UM-4 size 1.5V battery.

1. Gently slide up to remove the battery door of main unit. Loosen the screw on the battery door of sensor unit and lightly remove the door.
2. Insert batteries according to polarity indications inside the battery compartments.
3. Replace the battery doors and tighten the screw.
   [see illustration]



Linking Remote Sensor with Main Unit

Use the CHANNEL slide switch on remote sensor to select channel number. (One main unit can only connect to one sensor for each channel.) Then insert batteries into the sensor unit. Now also insert batteries into main unit. The display of main unit will show full segment for a few seconds and return to normal display mode. The symbol ((•)) at remote temperature display area will flash and the receiver will search for remote sensor automatically for two minutes. Once the main unit receives the signal, beep tone will be heard and the display will show temperature

and channel number of this remote sensor. The symbol ((•)) will then flash continuously. However, if no remote sensors can register successfully within two minutes, remote channel number and temperature will be shown as "-" and "--.-" respectively. The symbol ((•)) will disappear.

It is possible that RF linking between main unit and remote sensor is interrupted by strong interference generated from some devices e.g. mobile phone, cordless phone, TV, radio, etc. The product has the function to search and pick up signals automatically after interference becomes weak. However, if you reset the remote sensor or replace its batteries, the linking will be lost. Then you need to register this remote sensor with main unit by the following procedures:

Use a pin to press the SCAN button of main unit, the symbol ((•)) will start to blink and signals will be received.

If you want to change the channel of remote sensor, slide the CHANNEL slide switch to your desired channel position and use a pin to insert into the hole of RESET button. Then, register this sensor using the above procedures.

Use the above procedures to register extra remote sensors if necessary.

Note: If main unit suddenly disconnects with remote sensor, it will keep tracing the signal continuously until 6:00 a.m. of the next day. Afterward, it will no longer receive the signal and re-register will be required.

HOW TO OPERATE THE UNIT

Setting the Clock

Using following steps to set the clock and calendar (default is 0:00, 1 Jan 2000 for 24-hour format or 12:00 am, 1 Jan 2000 for 12-hour format)

1. Press **SET** and **MODE** buttons simultaneously for 2 seconds in normal display mode, the unit will enter year setting mode, the digits of year will flash.
2. Press "+" or "-" button on the back side of the unit to increase or decrease the value of year. Press and hold the button for more than 2 seconds to fast increase or decrease the value.
3. Press **MEMORY** button to confirm and enter month/date setting mode, the digits of month will flash. Press "+" or "-" to change the value.
4. Press **MEMORY** button to confirm and start date setting, the digits of date will flash. Press "+" or "-" to change the value.
5. Press **MEMORY** button to confirm and start clock setting, hour digits will flash. Press "+" or "-" to change the value. Press **MEMORY** again to start minute setting, minute digits will flash. Press "+" or "-" to change the value.
6. Press **MEMORY** button to confirm, the unit will quit setting mode and return to normal clock display mode.

Note: During calendar setting, the indicator for day of week will move accordingly.
The unit will quit from setting mode and return to normal display mode automatically if there is no key action within 10 seconds.

Summer Time

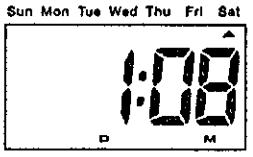
Press and hold **SET** and **CLEAR** buttons simultaneously for 2 seconds to enable or disable summer time. The icon ☼ will display for summer time mode.

12/24-hour Format

Press and hold CLEAR button for 2 seconds in clock display mode to change 12/24-hour format of the clock display.

CLOCK FUNCTION

The product has real-time clock function with year, month, date and day of week. Day of week indicator will show in any display modes to point out the day. [see illustration]



1. Press MODE once in normal display mode to show date and month.

2. Press MODE again to show year.

3. Press MODE again to return to clock mode.

Note: If there is no key action within 10 seconds in year or date mode, it will return to normal display mode automatically.

DAILY ALARM

Setting Alarm Clock

1. Press and hold **SET** and **ALARM** buttons simultaneously for 2 seconds to enter alarm clock setting mode. Alarm symbol 🔔 and alarm hour digits will flash.
2. Press "+" or "-" button to change the value.
3. Press **MEMORY** button to confirm and set alarm minute. Minute digits will flash.
4. Press "+" or "-" to change the value.
5. Press **MEMORY** button to confirm.
6. The unit will quit from alarm setting mode and return to normal clock mode. The alarm symbol 🔔 will display and alarm will be active automatically.

Note: If there is no key action within 10 seconds, it will quit from alarm setting mode and return to normal display mode.

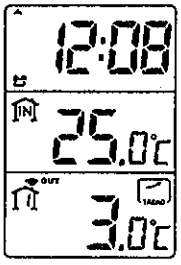
Switch On/Off Daily Alarm

Press ALARM button once in normal display mode to enable or disable daily alarm. Alarm symbol will be displayed if alarm is enable.

When the time is up, alarm will sound for 2 minutes if no key action. Press any key to stop the alarm.

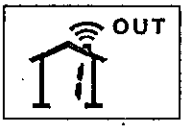
TEMPERATURE FUNCTION

The middle of LCD display shows indoor temperature and the bottom of the display shows remote temperature. (see picture)



Remote Temperature Display

1. In normal display mode, press **CHANNEL** button to select desired channel of remote temperature. The display will show channel number.



2. If you select "A", the display will enter auto-scroll mode, and show every channel temperature for a while from channel 1 to 3 repeatedly.

3. Press **CHANNEL** again to select any channels and quit from auto-scroll mode.

Maximum/Minimum Memory

The unit will record maximum and minimum temperatures for both indoor and remote channels.

1. In normal display mode, press **MEMORY** button once to show maximum values of both indoor and remote temperatures. The symbol will display in both indoor and remote temperature display areas.
2. Press **CHANNEL** button to show maximum value of another channel.
3. Press **MEMORY** button again to show minimum values of both indoor and remote temperatures. The symbol will display.
4. Press **CHANNEL** button to show minimum value of another channel.
5. Press **MEMORY** button again to return to normal display mode.

Note: If there is no key action within 10 seconds, it will automatically return to normal display mode.

To Clear Memory

1. When the display shows maximum values, press **CLEAR** button at the back side of the unit to clear maximum value memories of both indoor and remote displayed temperatures. To clear maximum value memory of another remote temperature, press **CHANNEL** to select desired channel and press **CLEAR**.
2. When the display shows minimum values, press **CLEAR** button to clear minimum value memories of both indoor and remote displayed temperatures. To clear minimum value memory of another remote channel, select desired channel and press **CLEAR**.
3. The memory will be updated by current reading immediately.

Temperature Alert Function

Temperature alert function allows you to set high/low limits for both indoor and remote temperatures. Once the temperature exceeds the limits, alert tone will sound and high/low limit symbol will flash for 30 seconds if no key action. If the alert is caused by one remote channel, the display will show that channel number and reading. After 30 seconds, the symbol will keep flashing until the temperature comes back to the range within the limits or any key is pressed. Press any keys to stop alert and the symbol will also disappear.

Setting High/Low Limit

1. Press SET and MEMORY buttons simultaneously for more than 2 seconds in normal display mode, the unit will enter lower limit setting of indoor temperature. Previous setting and the symbol ▼ will display and flash in indoor temperature display area. (see picture)

Note: If this is the first time to set high/low limit, the display will show"--.-°C"

2. Press "+/-" to increase or decrease the value.
3. While setting, you can press CLEAR to clear value.
4. Press MEMORY to confirm and enter upper limit setting of indoor temperature. Previous setting and the symbol ▲ will display and flash.
5. Press "+/-" to change the value.
6. Press MEMORY to confirm and enter channel 1 setting.
7. Repeatedly press "+/-" to change values and press "MEMORY" to confirm settings for high/low limits of other channels if applicable.

Note: The upper limit temperature should always be 1°C (or 2°F) higher than the lower limit temperature.
If there is no key action within 10 seconds during setting, the unit will return to normal display mode automatically.

Temperature Trend Indicator

The temperature trend indicator is available for remote temperature. ↗ indicates temperature rising, ↘ indicates temperature dropping and → represents steady.

OTHER FUNCTIONS

Backlight

The display has LED backlight which allows you to use and operate the unit in dark environment. Press and hold MODE/☀ button for 2 seconds, the backlight will be switched on for 5 seconds. Further pressing any buttons within 5 seconds will extend the backlight for another 5 seconds. The backlight will be off if there is no key action within 5 seconds.

Low Battery Indication

The main unit can show low battery power on display. When the battery power is low, battery icon ⊏\⊐ will display.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antenna.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- ☐ Consult the dealer or an experienced radio/TV technician for help.

PRACTICAL TIPS FOR SOLVING PROBLEMS ENCOUNTERED WITH 433MHz TECHNOLOGY PRODUCTS

Functional Description

The 433MHz (Megahertz) technology facilitates the wireless, radio-frequency transmission of data over short to medium distances. The information to be transmitted is modulated onto a carrier wave oscillating at a frequency of 433MHz. The underlying principle may be compared to a postman delivering a letter. In our case, the 433MHz carrier frequency is the postman, while the data package being transmitted is the letter. The receiver equipment extracts and evaluates all relevant information from the 433MHz signal. Such relevant information may be data for a weather station, music, images, etc.

The 433MHz frequency has been approved for general use, that is, any person is entitled to operate licensed equipment in that frequency band, and there is no requirement to register the equipment or to pass an amateur radio licence test. Without this new technology, the creation of innovative products such as the wireless temperature sensor, Babyfone (to monitor a child's room), LPD transceivers (miniature radio equipment) or audio transmission systems would not have been possible.

However, legal requirements impose tight restrictions on the admissible transmitting power (the maximum carrier power is limited to 10mW) and bandwidth (433.05 MHz to 434.79MHz). These limitations may entail the odd problem when using the equipment:

Reception Problems

No display of transmitted data on the receiver unit.

Frequent loss of data transmission (e.g. temperature reading remains unchanged over various days / sometimes only bars appear on the display)

Possible Causes of Reception Problems

1. The location

- The transmitter may be attached to a metal frame or similar structure.
- Walls or ceilings separating transmitter and receiver may be made of reinforced concrete; walls or ceilings may contain metal braiding (e.g. lightweight precast panels with aluminium framing). The effective radius of the transmitter may also be considerably reduced by high atmospheric humidity.
- The windows separating transmitter and receiver may be steamed or specially insulated against heat loss.
- Mirrors or similar objects may be arranged in the immediate vicinity of the transmitter.

2. Interference

- Other 433 MHz equipment may be situated within a radius of 20 metres of your product (e.g. your next door neighbour's headphones or weather station using the same frequency).
- Several transmitters may be arranged too close to each other (minimum distance between transmitters: approx. 0.5 metres).
- Certain sources of electrical interference (such as microwave oven, heater control device, television, personal computer, or other household appliances) may be less than 2 to 3 metres away.

Troubleshooting

- Did you proceed exactly according to the operating instructions? Remember that the battery must be installed in the transmitter at first, then in the receiver!

- Before returning the product (transmitter and receiver) check its general functioning by operating both devices in one and the same room for two to three days. Choose a room where the risk of interference is low (such as the basement or garage). Please also make sure that the batteries are in perfect condition.

Note: If such testing reveals that the product is not defective, try to establish the source of the problem (e.g. by asking your next-door neighbours whether they are operating similar products, or by closely checking the site where you originally installed the product).

Try changing the location of the transmitter or receiver a number of times to find out which position achieves the most reliable transmission link.

SPECIFICATION

Main Unit

Display	: LCD display with clock and temperatures
Clock	: 12/24-hour format
Time format	: hh:mm
Calendar	: Year 2000 – 2049
Date format	: dd:mm or mm:dd
Temperature unit	: C/F selectable
Temperature range	: Indoor 0°C to 50°C (32°F to 122°F) Remote -20°C to 60°C (-4°F to 140°F)
Resolution	: 0.1°C (0.2°F)
Accuracy	: +/- 1°C (from 0 to 40°C) +/- 2°C (other range)
Power	: 3 x "AAA" or UM-4 size 1.5V battery

Sensor Unit

RF transmission	: 433MHz
Water-resistance	: splash-proof
Temperature range	: -20°C to 60°C (-4°F to 140°F)
Resolution	: 0.1°C (0.2°F)
Accuracy	: +/- 1°C (from 0 to 40°C) +/- 2°C (other range)
Power	: 2 x "AAA" or UM-4 size 1.5V battery