YIVOSUN

Wireless Pool Thermometer

USER MANUAL

Love what you grow™

Welcome to VIVOSUN

Thank you for choosing VIVOSUN. We are committed to product quality and friendly customer service. If you have any questions or suggestions, please don't hesitate to contact us.

CONTENTS

1. GETTING STARTED

Note: First, power up the pool sensor and then the Display Console second, don't press any buttons until all data has been received by the console.

1.1 Parts List

Display Console
Size: 4.3"x2.5"x0.65" (11×6.3×1.6cm) LCD Size: 2.1×1.7" (5.3×4.3cm)
Pool transmitter
Size: 6.9×4.2×3.7inch (17.5×10.6×9.5 cm)
2 x Wrench (for Upper lid and Lower lid) Note: The pool sensor is very tight for the purpose of water-proofing, please use wench to open and close it.

2. BATTERY INSTALLATION

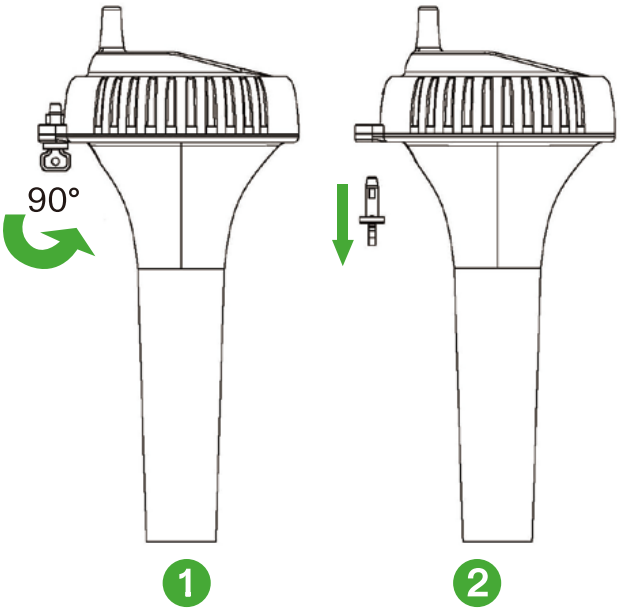
2.1 Pool Sensor (Transmitter)

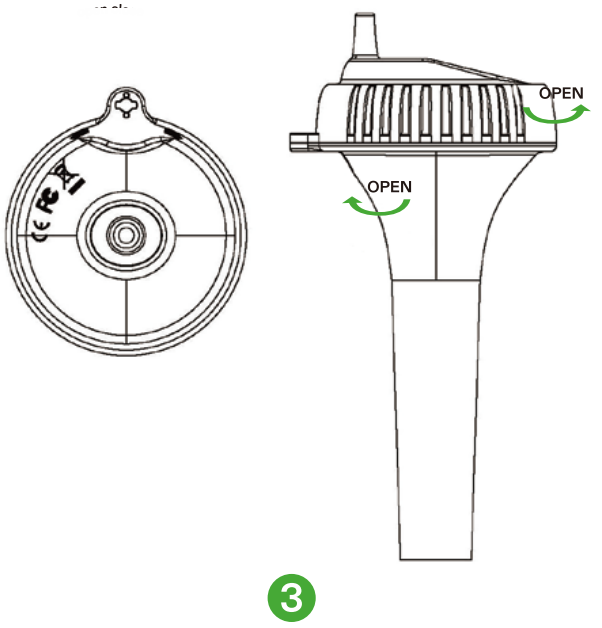
Note: To avoid permanent damage, please take note of the battery polarity before inserting them.

Note: We recommend fresh lithium batteries for sensor temperatures below -4 °F (-20 °C) in cold weather environments.

2. BATTERY INSTALLATION

1. To insert the batteries ① twist the KEY to unlock ② remove the KEY and ③ twist the main body of the sensor by removing the upper lid and lower lid with the wrench (included), as shown in the image below.

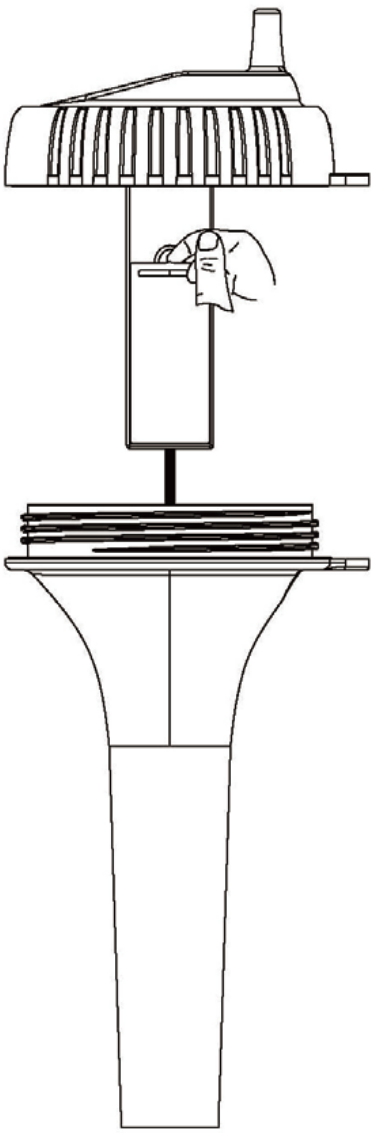




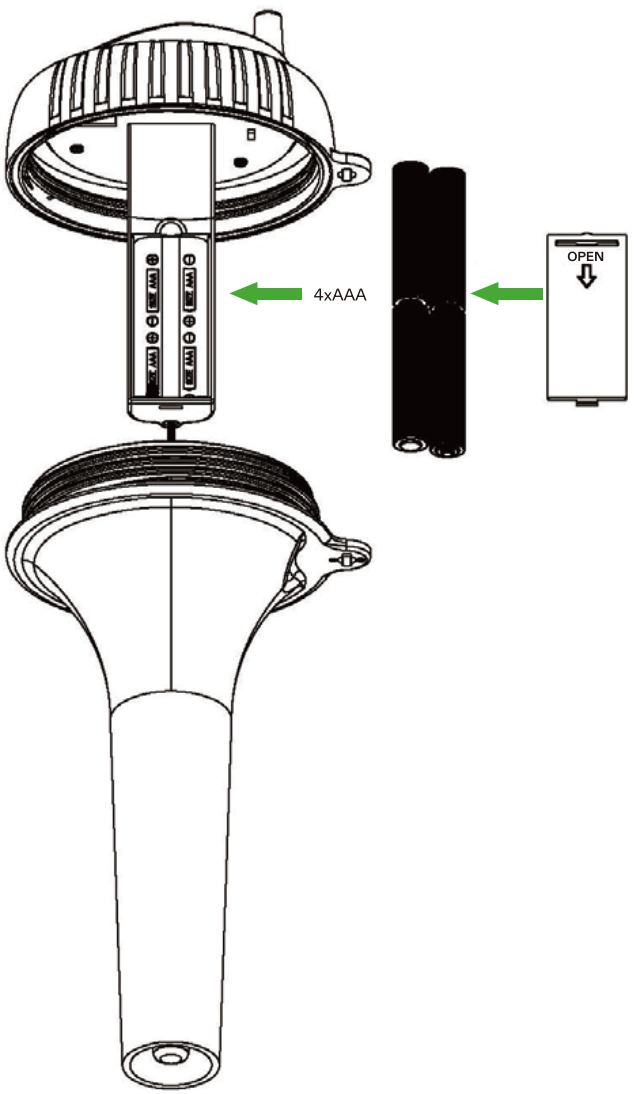
Note: Refer to Wrench Usage Instructions to the device easily.

2. BATTERY INSTALLATION

2. Install 4 x AAA batteries. (Note the battery polarity)



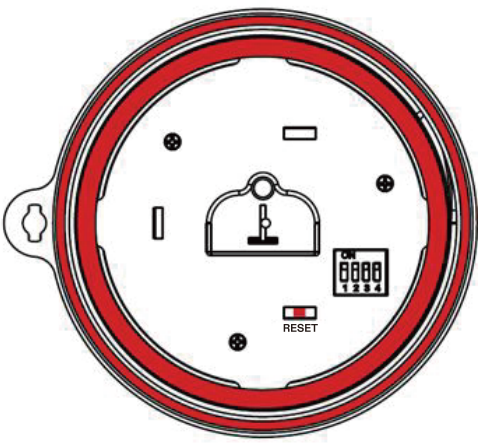
1



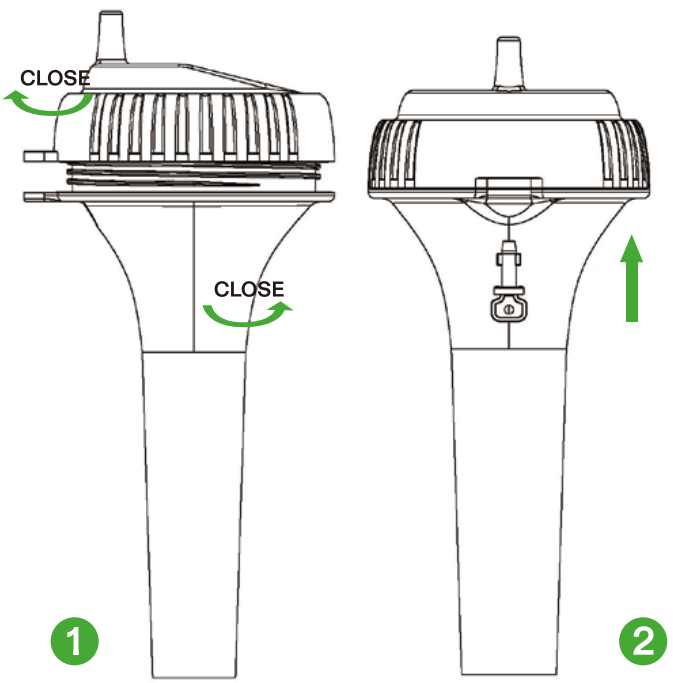
2

2. BATTERY INSTALLATION

3. Before closing the battery door, ensure that both red colored gaskets are properly seated in their tracks as shown in below image. Failure to properly seal the floating thermometer will result in water leakage and damage.

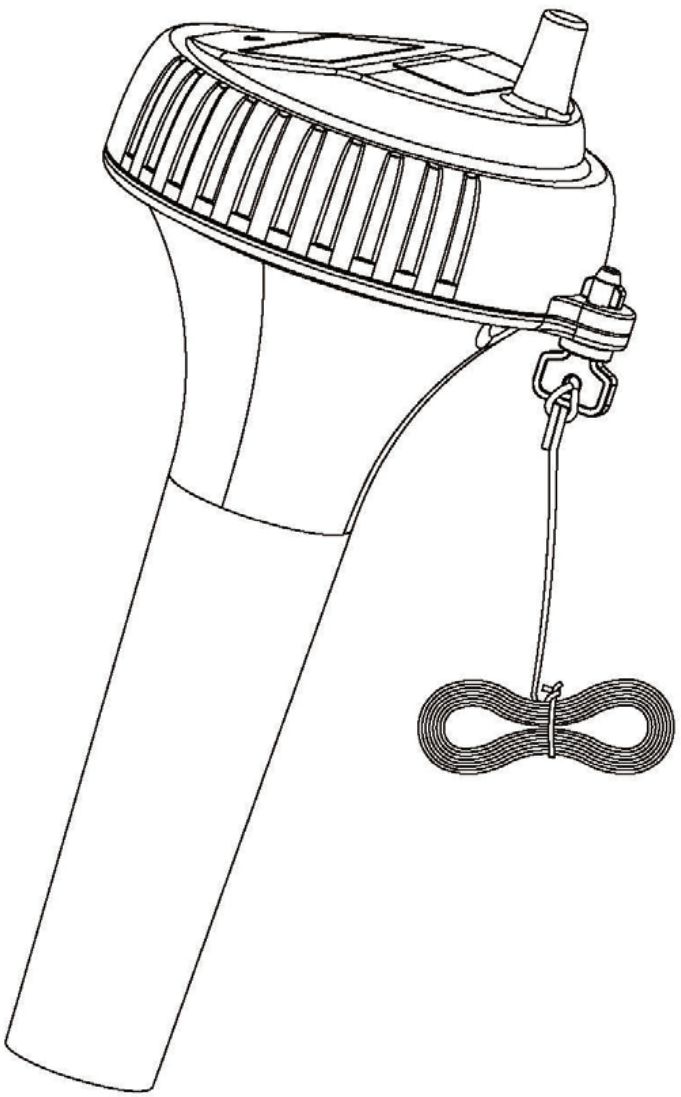


4. To close the lid ① twist the upper lid and lower lid with the wrench until it is firmly locked and the key hole is aligned. Insert the key and turn 90 degrees to lock the lid, as shown in below image.



2. BATTERY INSTALLATION

5. A tether can be attached to the keyhole to fix the sensor in a certain range (tether not included).

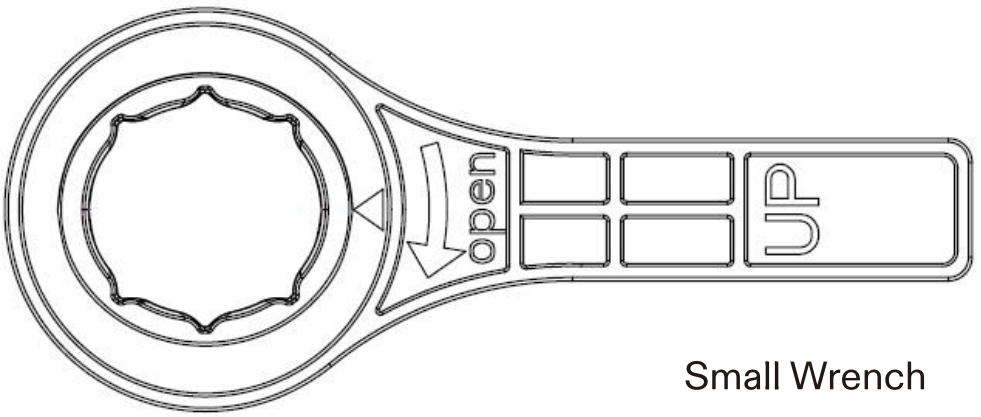


Note: Place the sensor in the water and make sure that it is within the effective transmission range (100' (30m) under most conditions) from the display console. Do not immerse the whole sensor into the water for a long time.

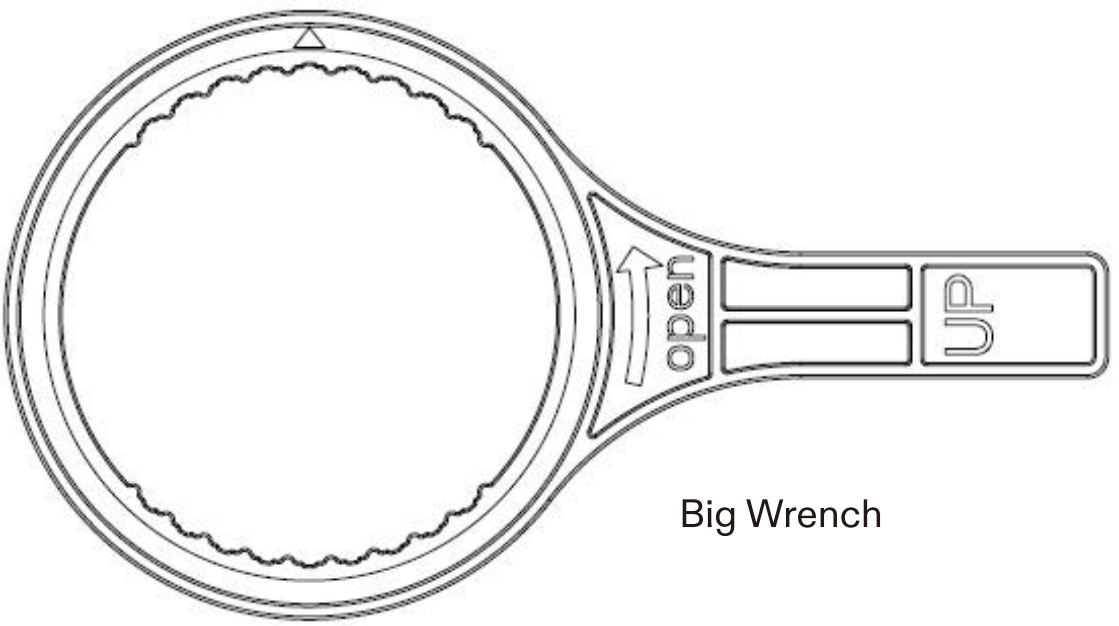
2. BATTERY INSTALLATION

2.1.1 Wrench Usage Instructions

Please refer to the following operation. Ensure the wrench is faced up with the word “up” facing upwards.



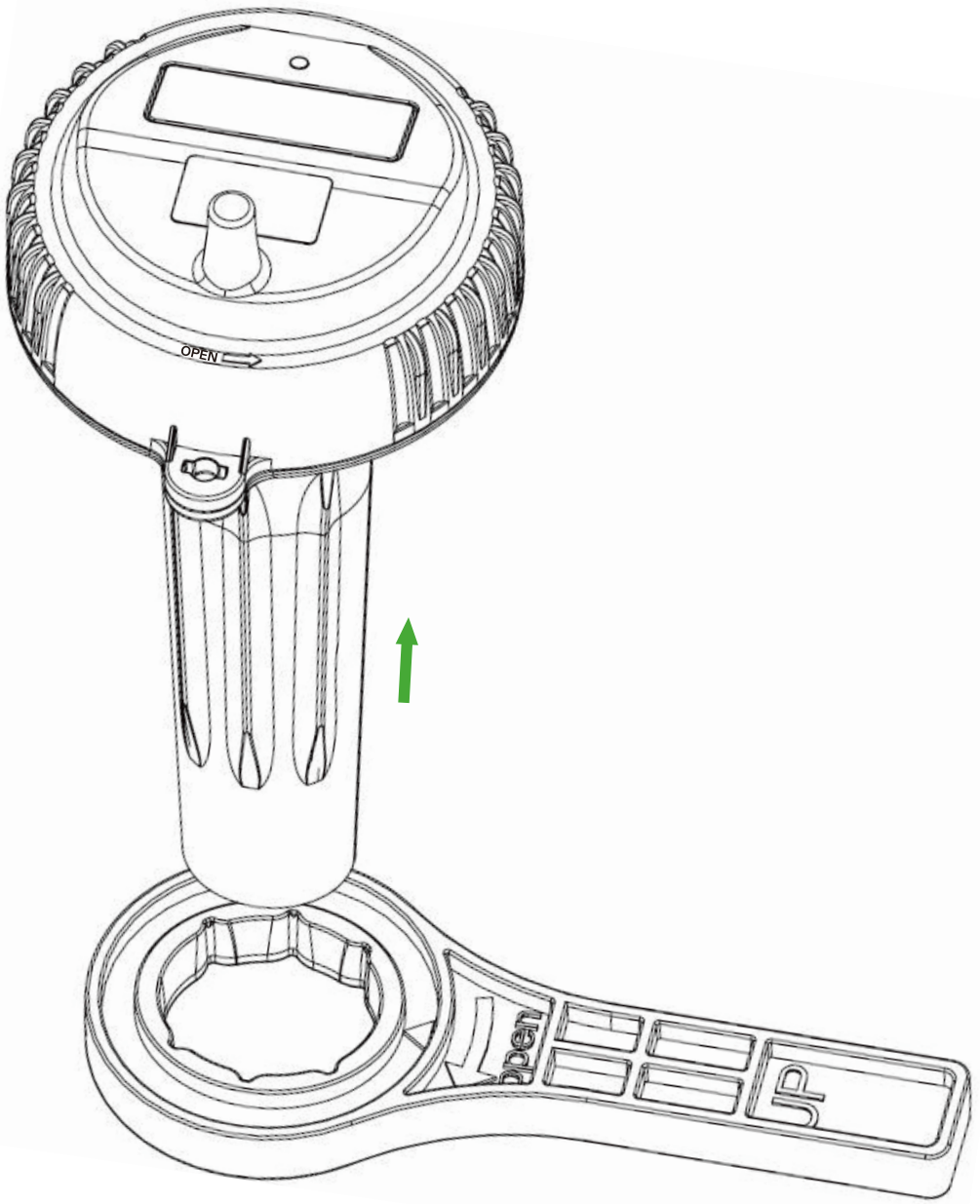
Small Wrench



Big Wrench

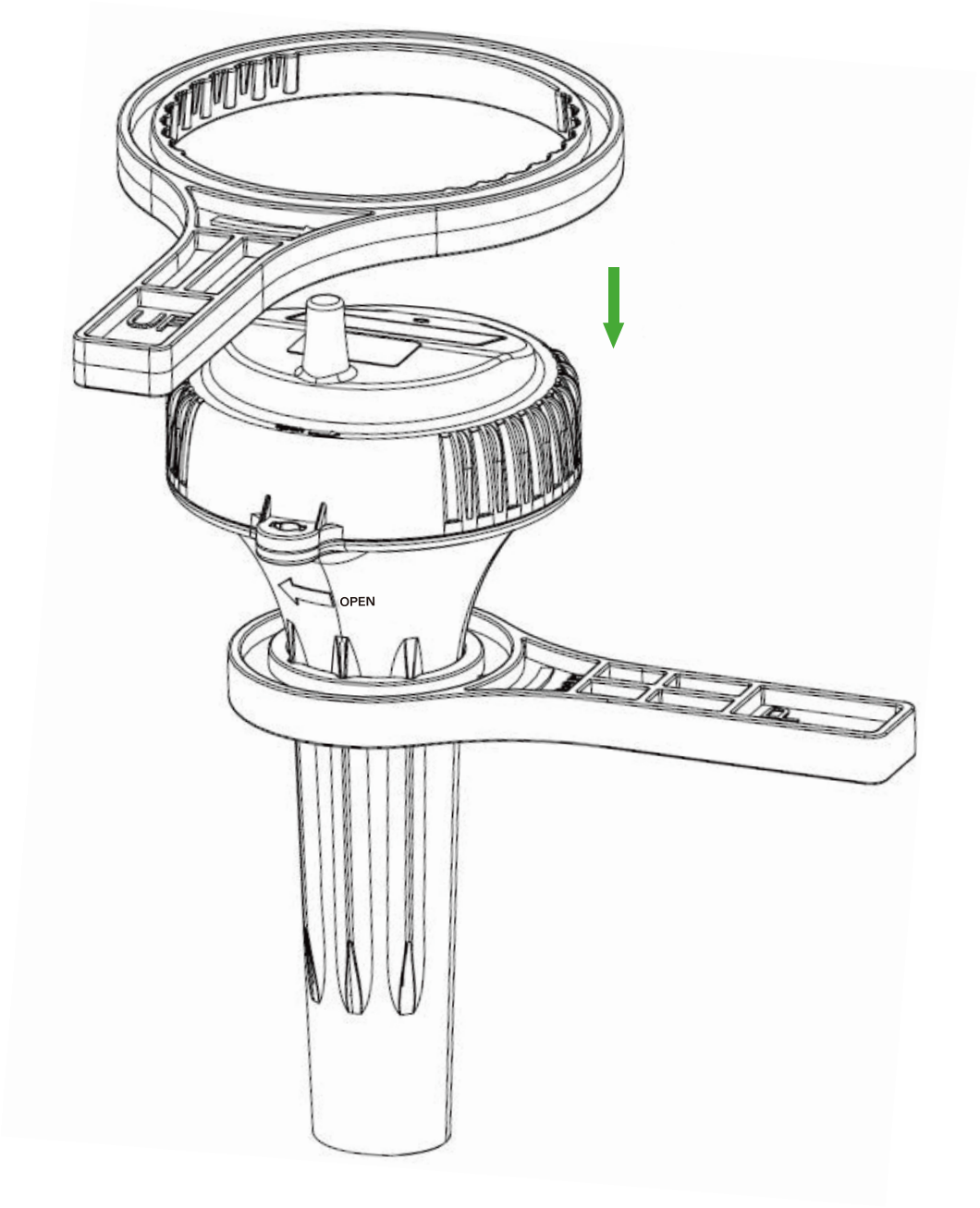
2. BATTERY INSTALLATION

1. The small wrench and the bottom cover must be attached tightly.



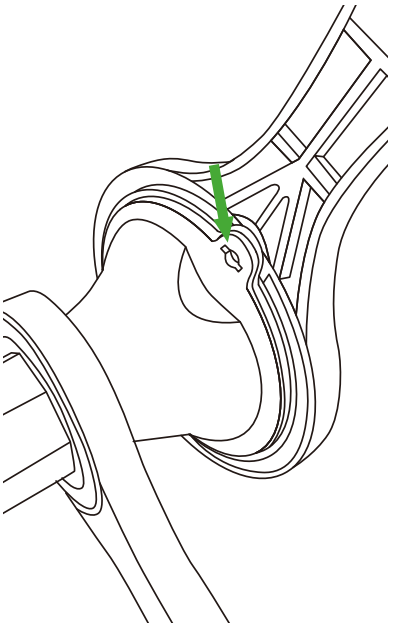
2. BATTERY INSTALLATION

2. The big wrench and the top cover must match tightly, pay attention to the diagram below when aligning the pieces.

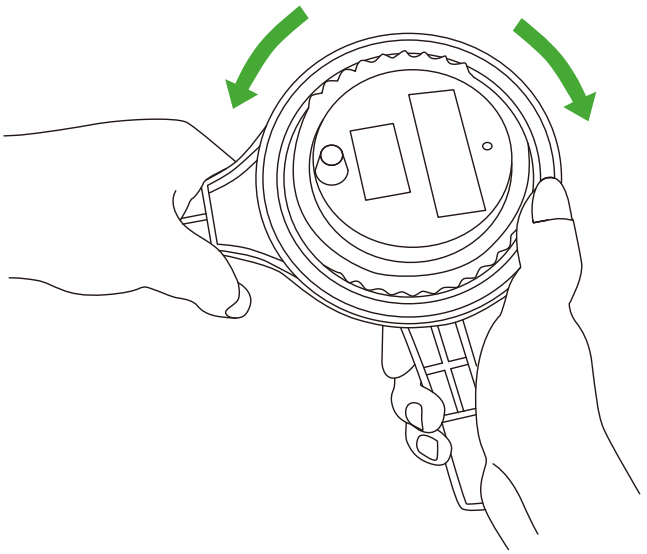


2. BATTERY INSTALLATION

3. Make sure that the two wrenches are properly matched to 90 degrees, so the device can be opened easily later.



4. Using your left hand, hold the big wrench and turn the cover counterclockwise while holding the small wrench firmly with your right hand.

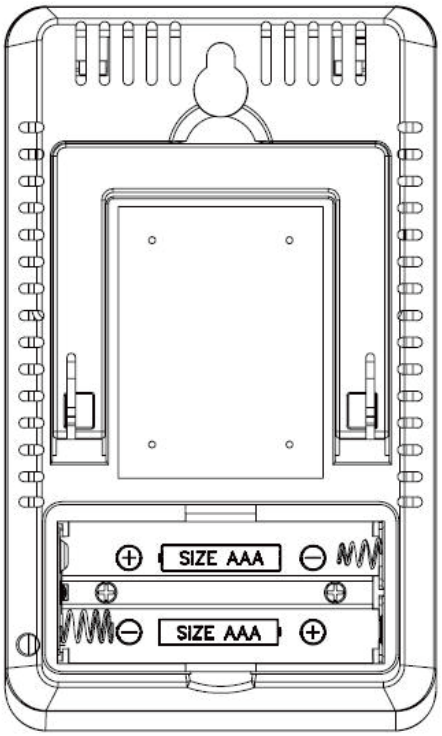


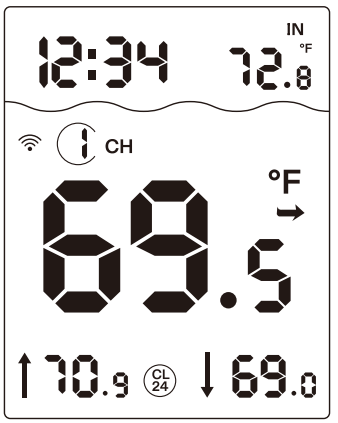
NOTE: You need to hold the big wrench with your right thumb, prevent the big wrench from slipping.

2. BATTERY INSTALLATION

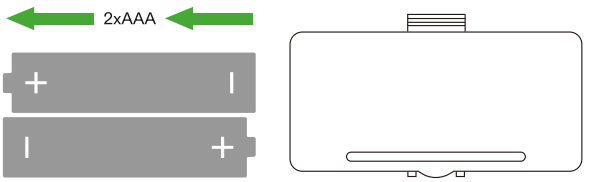
2.2 Display Console

1. Remove the battery door on the back of the console, as shown in below image.
2. Insert 2xAAA (alkaline or lithium – avoid rechargeable) batteries and close the battery door to place on the desk or mount on the wall.
3. Don't touch any buttons until all data has been received.





Console Display



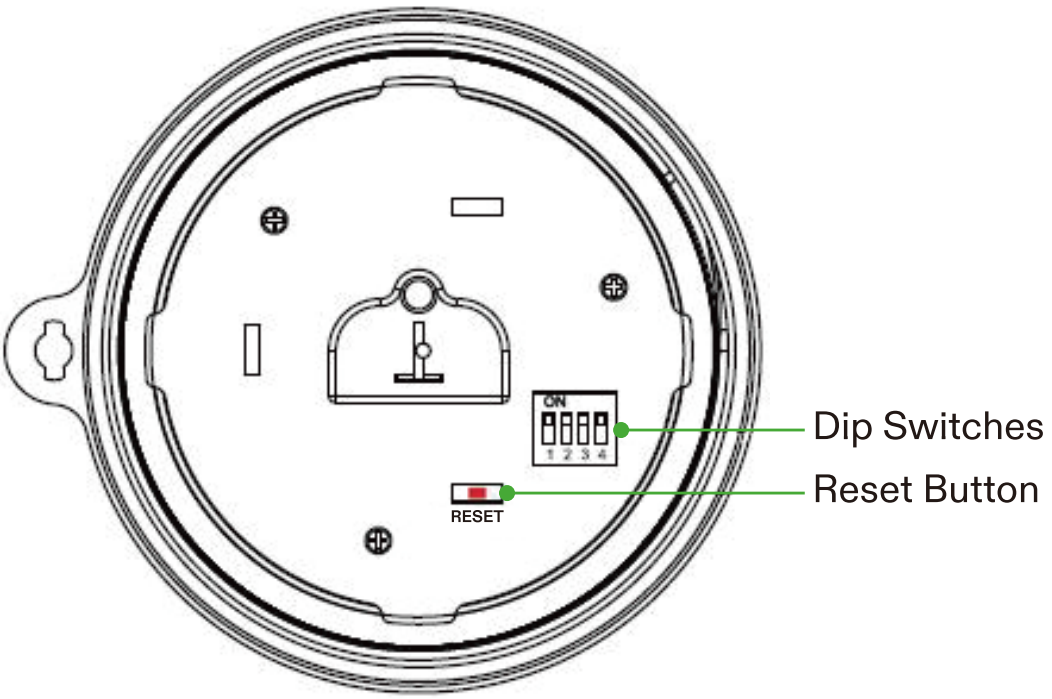
Note: Move the sensor about 5 to 10' (1.5 to 3m) away from the display console (if the sensor is too close, it may not be received by the display console).

Note: If you have more than one remote sensor, make sure they are all powered up and transmitting on different channels.

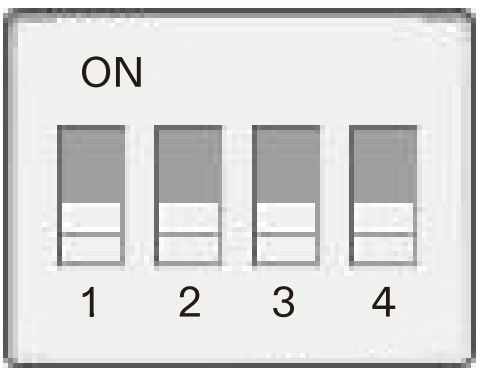
3. FEATURES

3.1 Pool Sensor Features

1. The pool sensor includes dip switches for assigning channel numbers (1-8).
2. The pool sensor includes a reset button. If the display does not power up after inserting the batteries, press the reset button as shown in image below.



3. All four dip switches are shown in the OFF position (factory default setting) in the image below.



3. FEATURES

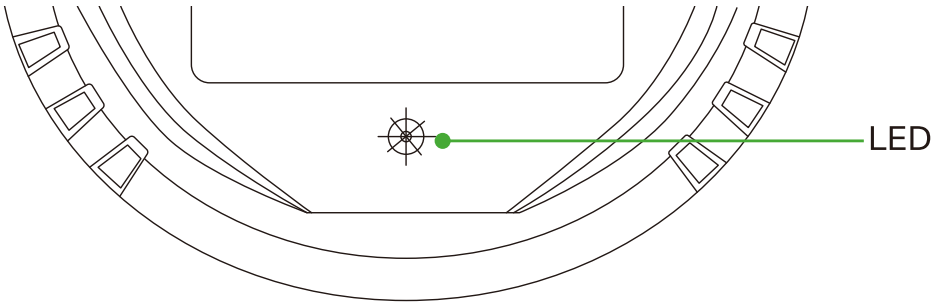
a. Channel Number: The display console supports up to eight transmitters. To set each channel number (the default is Channel 1), change Dip Switches 1, 2, and 3, as referenced in Table 1.
b. Temperature Units: To change the transmitter display temp units (°F vs. °C), change Dip Switch 4, as referenced in Table 1.

Note: Please press the Reset button after changing the Channel number or C/F unit; Or take out the batteries and then change the Channel or C/F unit.

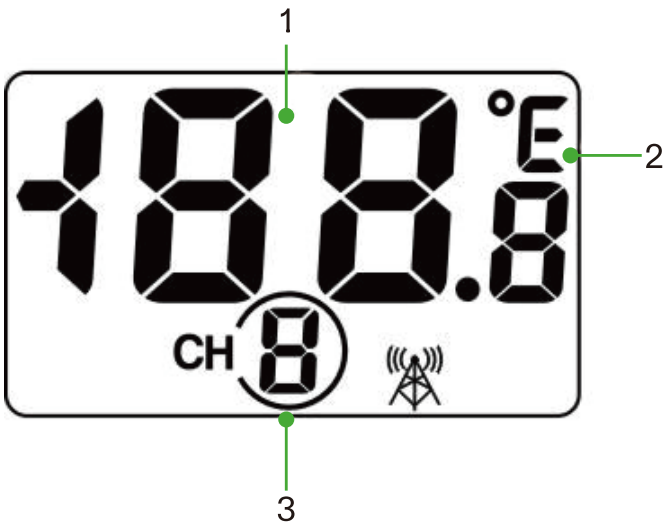
DIP SWITCH				Function
1	2	3	4	
DOWN	DOWN	DOWN	---	Channel 1
DOWN	DOWN	UP	---	Channel 2
DOWN	UP	DOWN	---	Channel 3
DOWN	UP	UP	---	Channel 4
UP	DOWN	DOWN	---	Channel 5
UP	DOWN	UP	---	Channel 6
UP	UP	DOWN	---	Channel 7
UP	UP	UP	---	Channel 8
---	---	---	DOWN	°F
---	---	---	UP	°C

3. FEATURES

4. After inserting the batteries, the remote sensor's LED indicator will light for 4 seconds, and then flash every 60 seconds thereafter. Each time it flashes, the sensor is transmitting data.



5. Verify that the correct channel number (CH) and temperature units (°F vs. °C) are displayed, as shown in below image.



1. Temp
2. Temp units (°F vs. °C)
3. channel number

3.2 Display Console Features

When the batteries are installed (don't press any buttons), the console will instantly display the indoor temperature and time. The pool temperature will be updated on the display in a few minutes on the appropriate channel.

Note: If the remote does not update, please refer to the trouble-shooting guide in Section 9.

3. FEATURES

3.2.1 Console SET Mode

Note: The console has three buttons for easy operation: SET button, MIN/MAX button, and CH/+ button.

To enter the SET mode, press and hold the SET key for 3 seconds and the 12/24 hour format will begin start to flash.

	Short Press SET Key to skip entering into the following features and flash.	Press the [+] or [-] key to set up the following features.
1	12/24 Hour Format	12 hour or 24-Hour Format
2	Hour	Hour value up or down
3	Minute	Minute value up or down
4	Alarm Hour	Alarm Hour value up or down (While the alarm value is flashing, press and hold the SET button for three seconds to turn alarm ON and OFF.)
5	Alarm Minute	Alarm Minute value up or down (While the alarm value is flashing, press and hold the SET button for three seconds to turn the alarm ON and OFF.)
6	Temperature Units	°F or °C
7	Max/Min Clearing	ON (Clears Daily) or OFF (Manually)
Press the SET key to exit the Settings Mode.		

3. FEATURES

3.2.2 Console ALARM Mode

1. Alarm Defaults

Channel	Default Condition	HI ALARM °C(°F)	LOW ALARM °C(°F)
1	OFF	38(100)	15(60)
2	OFF	43(110)	32(90)

2. View and Set HI/Low Alarm

Note: The high and low alarms can be set for Channels 1 and 2 only.

a. Press the CH/+ button to switch the display between Channel 1 and 2.
b. Next, press the SET button once, the HI/Low alarm and alarm icon ALARM will be displayed.
c. Press and hold the SET button for 3 seconds, and the temperature HIGH (Max) alarm will flash.
d. Press the [+] or [-] button to increase or decrease the HIGH alarm. Press and hold the [+] or [-] button to change rapidly. While the alarm value is flashing, press and hold the SET button for three seconds to turn the alarm ON and OFF. The alarm icon will appear when set, and disappears when disabled.
e. Press (do not hold) the SET button again to set the LOW (Min) temperature alarm. The LOW alarm for temperature will flash.
f. Press the [+] or [-] button to increase or decrease the LOW alarm. Press and hold the [+] or [-] button to change rapidly. While the alarm value is flashing, press and hold the SET button for three seconds to turn alarm ON and OFF. The alarm icon will appear when set, and disappears when disabled.

3. FEATURES

3.2.3 Console Min/Max Mode

a. In normal mode, press the MIN/MAX button once and the MAX arrow will flash. Press the MIN/MAX button again and the MIN arrow will flash.
b. Press the MIN/MAX button again to return to normal mode.
c. To reset the Max/Min values, press and hold the MIN/MAX-button for 3 seconds.

3.2.4 Console Channel Mode

1. Channel Selection

Press the CH/+ button to switch the display between remote sensors 1 through 8, and scroll mode . In scroll mode, all of detected outdoor sensors will be displayed at five second intervals.

2. Sensor Search Mode

If any of the sensor communication is lost, dashes (--.-) will be displayed on the screen. To reacquire the signal:

a. If a specific channel is lost, press the CH/+ button to display this channel, then press and hold the CH/+ button for 3 seconds, and the remote search icon will be displayed continuously for up to 3 minutes. Once the signal is reacquired, the remote search icon will turn off, and the current values will be displayed.
b. If new sensors are added, subtracted, or multiple sensor channels are lost, Press and hold the CH/+ button for 5 seconds (on any channel), and the remote search icon will be constantly displayed for up to 10 minutes. Once the signal is reacquired, the remote search icon will turn off, and the current values will be displayed.

3. FEATURES

3.2.5 Rate of Change Icon

The rate of change icon  detects rapid changes of remote temperature. If the arrow points upward, the temperature increases at a rate of +2°C(4°F) per 30 minutes (or greater). If the arrow points downward, the temperature is decreasing at a rate of -2°C(4°F) per 30 minutes (or less).

3.2.6 Temperature Calibration

1. Pool Sensor Temp Calibration

a. Prior to entering the calibration mode, press the CH/+ button to select the pool temperature sensor (CH1-8) to be calibrated.

b. To enter the temperature calibration mode, press and hold the SET and CH/+ buttons at the same time for 5 seconds and the pool temperature value will begin flashing. Press the CH/+ button to increase the temperature and the MIN/MAX button to decrease the temperature reading in 0.1° increments. To rapidly increase (or decrease) the temperature reading, press and hold the CH/+ or MIN/MAX button.

c. To return the temperature to the actual or uncalibrated measurement, press the SET button.

d. Once the displayed temperature equals the calibrated source, press and hold the SET button for three seconds, or wait 15 seconds for the timeout, and the temperature value will stop flashing.

2. Indoor Temperature Calibration

a. To enter the indoor temperature calibration mode, press and hold the SET and MIN/MAX buttons at the same time for 5 seconds and the “IN” temperature value will begin flashing. Press the

CH/+ button to increase the temperature and the MIN/MAX button to decrease the temperature reading in 0.1° increments. To rapidly increase (or decrease) the temperature reading, press and hold the CH/+ or MIN/MAX button.

b. To return the temperature to the actual or uncalibrated measurement, press the SET button.
c. Once the displayed temperature equals the calibrated source, press and hold the SET button for three seconds, or wait 15 seconds for the timeout, and the temperature value will stop flashing.

Note: The calibrated value can only be adjusted on the console. The remote sensor always displays the uncalibrated or measured value.

The purpose of calibration is to fine-tune or correct any sensor error associated with the device's error margin. The measurement can be adjusted from the console to calibrate to a known source. Calibration is only useful if you have a known calibrated source to compare to and is optional. This section discusses practices, procedures and sources for sensor calibration to reduce manufacturing and degradation errors. Do not compare your readings to sources such as the internet, radio, television or newspapers. They are in a different location and typically update once per hour. The purpose of your weather station is to measure the conditions of your environment, which vary significantly from location to location.

Discussion: Temperature errors can occur when a sensor is placed too close to a heat source (such as a building structure, the ground, or trees).

To calibrate temperature, we recommend a mercury or red spirit (fluid) thermometer. Bi-metal (dial) and other digital thermometers are not a good source and have their own margin of error. Using a local weather station in your area is also a poor source due to

3. FEATURES

changes in location, timing (airport weather stations are only updated once per hour), and possible calibration errors (many official weather stations are not properly installed and calibrated).

4. OPERATION VERIFICATION

Verify that indoor and sensor temperature match closely with the console and sensor array in the same location (about 1.5 to 3meters apart). The sensors should be within 2°C/4°F (the accuracy is ±1°C/2°F). Allow about 30 minutes for both sensors to stabilize.

5. IMPROVING TRANSMISSION

Wireless communication is susceptible to interference, distance, walls and metal barriers. We recommend the following best practices for trouble-free wireless communications.

1. Electro-Magnetic Interference (EMI). Keep the console several feet away from computer monitors and TVs.
2. Radio Frequency Interference (RFI). If you have other 433 MHz devices and communication is intermittent, try turning off these other devices for troubleshooting purposes. You may need to relocate the transmitters or receivers to eliminate intermittent communication.
3. Line of Sight Rating. This device is rated at 50 meters line of sight (no interference, barriers or walls) but typically you will get

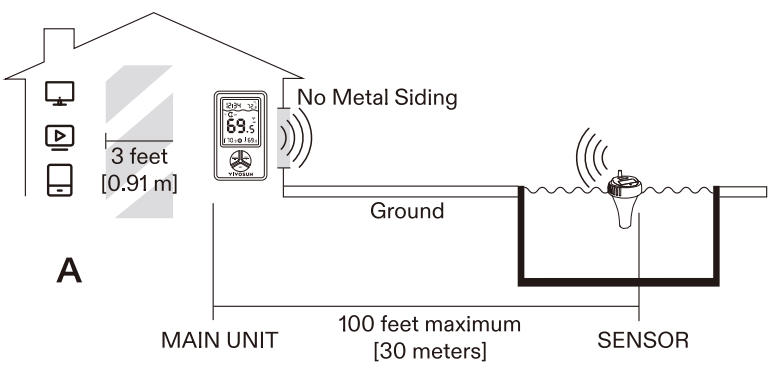
5. IMPROVING TRANSMISSION

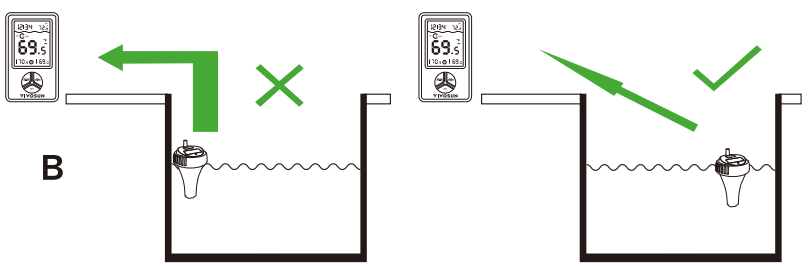
30 meters maximum under most real-world installations, which include passing through barriers or walls.

4. Metal Barriers: Radio frequency will not pass through metal barriers such as aluminum siding. If you have metal siding, align the remote and console through a window to get a clear line of sight.

6. POOL SENSOR PLACEMENT

1. Place the sensor in the pool or spa within 30 meters of the display console (Reference A). Avoid transmission through solid earth or ground (Reference B).
2. Place the console at least three feet away from computers, TVs and wireless phones.
3. Avoid transmitting through solid metal barriers.





7. POOL SENSOR MAINTENANCE

During each battery change (1-2 years), we recommend applying waterproof silicon grease to the seals.
Silicone grease is available at most hardware and pool stores.

Note: Not recommended for covered spas. A wireless signal will not penetrate solid metal or ground.

8. SPECIFICATIONS

1. Wireless Specifications
a. Line of sight wireless transmission (in open air): 165 feet (50m), 100 feet (30m) under most conditions.
b. Frequency: 433 MHz
c. Update Rate: 60 seconds

2. Measurement Specifications

Measurement	Range	Accuracy (Resolution)
Indoor Temperature	32 to 140 °F (0°-60°C)	±2°F/±1°C (0.1 °F/°C)
Outdoor Temperature	-40 to 140 °F (-40°-60°C)	±2°F/±1°C (0.1 °F/°C)

3. Power Consumption

Base station (display console): 2 x AAA 1.5V Alkaline or Lithium batteries (not included)
Pool sensor: 4 x AAA 1.5V Alkaline or Lithium batteries (not included)

8. SPECIFICATIONS

Battery life: Minimum 12 months for base station. Intermittent reception and multiple sensors may reduce battery life.
Minimum 12 months for pool sensor (use lithium batteries in cold weather climates less than -4 °F/-20°C)

9. TROUBLESHOOTING GUIDE

Problem

Wireless remote (thermometer) not reporting into console. There are dashes (---) on the display console.

Solution

1. If any of the sensor communication is lost, dashes (---) will be displayed on the screen. To reacquire the signal, press and hold the CH/+ button for 3 seconds, and the remote search icon will be constantly displayed. Once the signal is reacquired, the remote search icon will turn off, and the current values will be displayed.
2. The maximum line of sight transmit range is 165' (50m) and 100' (30m) under most conditions. Move the sensor assembly closer to the display console.
3. If the sensor assembly is too close (less than 5'/1.5m), move the sensor assembly away from the console. Make sure the remote sensor LCD display is working and the transmitter light is flashing once per 60 seconds.
4. Install a fresh set of batteries in the remote thermometer. For cold weather environments, install lithium batteries.

9. TROUBLESHOOTING GUIDE

5. Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill).
6. Move the display console around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers.
7. Move the remote sensor to a higher location. Move the remote sensor to a closer location.

Problem

Indoor and Outdoor Temperature do not agree.

Solution

1. Allow up to one hour for the sensors to stabilize due to signal filtering. The indoor and outdoor temperature sensors should agree within 4°F/2°C (the sensor accuracy is ±2°F/1°C).
2. Use the calibration function to match the indoor and outdoor temperature to a known source.

Problem

Display console contrast is weak.

Solution

1. Replace the console batteries with a fresh set of batteries.

Designed by VIVOSUN in California.

Made in China