

WS-9170U-IT FAQs

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Batteries

- ✓ Half of all warranty issues can be resolved with fresh batteries of the appropriate voltage.
- ✓ We suggest name brand alkaline batteries for indoor displays such as temperature stations.
- ✓ Use batteries dated at least six years in advance of the current year. Batteries dated earlier than six years from now may still work, but may be unstable in performance.
- ✓ Alkaline batteries manufactured this year will have an expiration date 10 years in the future. Battery technology has improved and batteries will maintain voltage longer in storage. However, the environment the batteries reside in for the 10 years can deplete the power.
- ✓ Good name brand batteries make less noise, which reduces the chance of RF (radio frequency) interference from the battery compartment. A minimum voltage of 1.48V for each battery is necessary for proper performance.
- ✓ **Outdoor Transmitters:** Use Alkaline batteries (or Lithium for temperatures below - 20°F/-28.8°C)
- ✓ **Temperature station:** Use Alkaline batteries. Overpowered or underpowered batteries may cause loss of indoor readings, missing segments, dim display etc.

Temperature Station Factory Restart

- ✓ Remove all batteries from outdoor sensor and temperature station.
- ✓ Press one of the buttons on the temperature station at least 20 times to clear all memory.
- ✓ Verify that the temperature station is blank before proceeding (there may be lines painted on the screen).
- ✓ Leave both units without power for 15 minutes (very important).
- ✓ Insert fresh batteries into the outdoor sensor.
- ✓ Insert fresh batteries into the temperature station.
- ✓ Keep the outdoor sensor 5-10 feet from the temperature station.
- ✓ When RF connection is established, the temperature will appear on the station. Allow the outdoor sensor and temperature station to sit together for 15 minutes to establish a strong connection.
- ✓ Do not press buttons for 15 minutes.
- ✓ For optimum 433MHz transmission, the outdoor transmitter should be a distance of no more than 330 feet (100 meters, open air) from the Temperature station.
- ✓ See the section on [mounting](#) and [distance/resistance/interference](#) for details on mounting the outdoor transmitter.

Outdoor Temperature Transmitter

Compatible Outdoor Transmitters

- ✓ The TX45UTH-IT (915MHz) will work with this station.

Fahrenheit/Celsius

- ✓ Press the °C Key to change temperature display unit to degree Celsius.
- ✓ Press the °F Key to display degree Fahrenheit.

Flashing Outdoor Temperature

- ✓ The outdoor Temperature reading will flash when the connection is first lost or intermittent between the temperature station and the outdoor transmitter.
- ✓ [Distance/Resistance](#) is generally the cause of intermittent connection or loss of connection between the transmitter and the temperature station.
- ✓ Check the [position](#) of the temperature station. Turn the temperature station 90 degrees towards the outdoor transmitter for better reception.
- ✓ Try the [quick connect](#) or [factory restart](#).
- ✓ [Batteries](#) often resolve the connection issue.

Dashes shown for Outdoor Temperature

- ✓ Dashes means the connection is lost between the temperature station and the outdoor transmitter.
- ✓ [Batteries](#) often resolve the connection.
- ✓ [Distance/Resistance](#) can cause loss of connection between the transmitter and the temperature station.
- ✓ Reorientation of the temperature station 90 degrees towards the outdoor transmitter may provide better reception.
- ✓ Try the [quick connect](#) or [factory restart](#).

Inaccurate Outdoor Temperature Reading

- ✓ The outdoor transmitter reads the environment. When mounted in the home it will read inside temperature.
- ✓ When the transmitter reads high during the day but not at night it is a [positioning](#) problem.
- ✓ **Side-by-side test:** Bring the outdoor transmitter in the house and place it next to the temperature station for 2 hours.
- ✓ Compare indoor and outdoor temperature. The temperatures should be within 4 degrees to be within tolerance. See the section on [accuracy](#) for details.
- ✓ If the transmitter reads correctly when next to the temperature station then try a different location outside.
- ✓ Look for heat sources such as sunlight, door or window frames, or reflected heat.

Intermittent Outdoor Temperature

- ✓ RF (radio frequency) communication may come and go occasionally. This can be normal in some environments (e.g. moister climates). If transmitter signal is lost, please wait 2-4 hours for the signal to reconnect on its own.
- ✓ Move the outdoor transmitter to a closer location.
- ✓ **Freezer test:** Confirm the temperature station is reading the correct outdoor transmitter. Place the transmitter in the freezer for an hour and watch the temperature drop on the temperature station.
- ✓ **Indoor distance test:** Please complete the [restart](#) with transmitter and temperature station 5-10 feet apart and inside to establish a strong connection.
- ✓ After 15 minutes if there is a reading in the outdoor temperature area, move the transmitter to another room with one wall between the transmitter and the

temperature station. Observe to see if the Temperature remains on consistently for 1-hour.

- ✓ If the temperature remains on while in the house then it is likely a distance/resistance issue. Move the transmitter to different locations outside to find a location where the temperature reading will hold.
- ✓ Distance/Resistance can cause loss of transmitter signal.
- ✓ Check Batteries.

Outdoor Temperature Is Stuck or OFL

- ✓ The last outdoor reading may remain (not change) for several hours when connection is lost.
- ✓ The outdoor temperature reading will flash when the connection is first lost or intermittent between the temperature station and the outdoor transmitter.
- ✓ Check batteries. Overpowered or underpowered batteries can cause this reading.
- ✓ Replace outdoor transmitter.

Outdoor Transmitter Fell and No Longer Works

- ✓ If there is no physical damage to the outdoor transmitter, the fall may not have caused internal damage.
- ✓ An outdoor transmitter that has fallen into a puddle or other standing water or snow may have water damage.
- ✓ Transmitters are water resistant, not waterproof.
- ✓ A fall can shock the transmitter or the batteries in the transmitter.
- ✓ Batteries that have fallen on a hard surface may be damaged and unable to function properly.
- ✓ Complete a restart with fresh batteries.
- ✓ Use batteries dated at least six years in advance of the current year.

Outdoor Transmitter Drains Batteries Quickly

- ✓ Test a new set of alkaline batteries. Write down the date of installation and the voltage of the batteries.
- ✓ When the batteries fail, please note the date and voltage again. This is helpful in determining the problem.
- ✓ Check the distance and resistance between the transmitter and temperature station. Transmitters at the end of the range may work while batteries are fresh but not after they drain a bit.
- ✓ Check for leaking batteries, which may damage the transmitter.

Mounting/Positioning Outdoor Transmitter

- ✓ Mount outdoor temperature transmitters vertically and under a bit of an overhang.
- ✓ Protect the outdoor transmitter from standing rain or snow, and from the overhead sun, which can cause it to read incorrectly. Generally, mounting under an eave or deck rail works well.
- ✓ Construct a small roof or box for the transmitter if you do not have an overhang. Please be sure the box is vented.

- ✓ Mount the transmitter on the North side to prevent sun from causing incorrect readings.
- ✓ Mount at least 6 feet in the air for a strong signal.
- ✓ Outdoor transmitters are water resistant but not water proof.
- ✓ Avoid more than one wall between the transmitter and the Temperature station.
- ✓ Do not mount near electrical wires, transmitting antennas or other items that will interfere with the signal.
- ✓ RF (radio frequency) signals do not travel well through moisture or dirt.
- ✓ Place the outdoor transmitter and the Temperature station in the desired shaded locations, and wait approximately 1-hour before permanently mounting the transmitter to ensure that there is proper reception.
- ✓ Do not mount the transmitter on a metal fence. This significantly reduces the effective range.

MOUNT

- ✓ Choose a location for the transmitter that is within range of the temperature station and under an overhang for accuracy.
- ✓ Install one mounting screw into a wall leaving approximately ½ inch (12.7mm) extended.
- ✓ Place the transmitter onto the screw, using the hanging hole on the backside.
- ✓ Gently pull the transmitter down to lock the screw into place.

Note: Always ensure that the transmitter locks onto the screw before releasing.

Distance/Resistance/Interference

Distance:

- ✓ The maximum transmitting range in **open air** is over 330-feet (100 meters) between the outdoor transmitter and the temperature station.
- ✓ Consider what is in the signal path between the temperature station and the transmitter.
- ✓ Consider the distance the temperature station is located away from other electronic in the home.

Resistance:

- ✓ Obstacles such as walls, windows, stucco, concrete, and large metal objects can reduce the range.
- ✓ When considering the distance between the transmitter and the temperature station (330 feet open air) cut that distance in half for each wall, window, tree, bush or other obstruction in the signal path.
- ✓ Closer is better.
- ✓ Do not mount the transmitter on a metal fence. This significantly reduces the effective range.

Interference:

- ✓ Consider items in the signal path between the transmitter and the temperature station.
- ✓ Sometime a simple relocation of the transmitter or the temperature station will correct the interference issue.
- ✓ Windows can reflect the radio signal.
- ✓ Metal will absorb the RF (radio frequency) signal.

- ✓ Stucco is held to the wall by a metal mesh.
- ✓ Transmitting antennas (ham radio, emergency dispatch center, airports, military base etc.)
- ✓ Electrical wires (utilities, cable etc.)
- ✓ Vegetation is full of moisture and reduces signal.
- ✓ Dirt: Trying to receive a signal through a hill is difficult.

Temperature station

Power Requirements

- ✓ 2-AAA alkaline batteries power the temperature station

Does the Temperature station Have a Backlight?

- ✓ No, this temperature station does not have a backlight.
- ✓ Generally, an a/c power cord is required for products to have a backlight.
- ✓ This temperature station does not use a/c power cord.

MIN/MAX Records

- ✓ Press the MIN/MAX button several times to view the MIN/MAX indoor temperature/humidity and MIN/MAX outdoor temperature/humidity sequentially.
- ✓ Press and hold MIN/MAX button for 3 seconds to reset all the indoor and outdoor records to current temperature/humidity.

Indoor Comfort Level

The indicator shows the comfort level of the surrounding environment based on the indoor humidity data. An arrow marks the current ambient humidity condition on the display from dry to wet in five levels:

Indicator	Indoor Humidity
✓ DRY	≤ 34%
✓ DRY/COMFORT	35 - 40%
✓ COMFORT	41 - 55%
✓ COMFORT/WET	56 - 64%
✓ WET	≥ 65%

Indoor Ambient Change Indicator

The ambient change icon shows the expected humidity changes when airflow from outside occurs in a room.

MORE WET	Expected humidity changes is $\geq + 5\%$
NO CHANGE	Expected humidity changes is within $\pm 4\%$
MORE DRY	Expected humidity changes is $\leq - 5\%$

Open | Close Window

The open/close window advice is based on the ambient temperature and humidity data.

- ✓ Three options of recommended actions: 'Open window', 'Close window', no action.
- ✓ Depending on the comfort level and the ambient change conditions, the 'Open window' and 'Close window' icons will be shown according to the table below:

Time | Date

- ✓ This station does not have time or date.

Dashes, OFL, or Stuck Indoor Temperature

- ✓ This is generally a power related issue.
- ✓ [Batteries](#) may be overpowered or underpowered. Remove batteries from temperature station.
- ✓ Press any button 20 times. Leave the temperature station unpowered for 1-2 hours.
- ✓ Insert fresh alkaline batteries with correct polarity.
- ✓ If the indoor temperature is still dashes or OFL, the temperature station may need replacement.

Inaccurate Indoor Temperature Reading

- ✓ **Side-by-side test:** Bring the outdoor transmitter in the house and place it next to the temperature station for 2 hours.
- ✓ Compare indoor and outdoor temperature. The temperature should be within 4 degrees to be within tolerance. See the section on [accuracy](#) for details.
- ✓ Look for heat sources such as sunlight, door or window frames, or reflected heat of cold.

Temperature station Has Missing Segments

- ✓ This is generally a power related issue.
- ✓ [Batteries](#) may be overpowered or underpowered. Remove batteries from temperature station.
- ✓ Press any button 20 times. Leave the temperature station unpowered for 1-2 hours.
- ✓ Insert fresh alkaline batteries with correct polarity.

Temperature station Is Dim

- ✓ Most temperature stations have a gray background. Place the temperature station at eye level. Is it still dim?
- ✓ Temperature stations that sit in the sunlight can develop a cloudy film over time.
- ✓ This is generally a power related issue.

- ✓ Batteries may be overpowered or underpowered. Remove batteries from temperature station.
- ✓ Press any button 20 times. Leave the temperature station unpowered for 1-2 hours.
- ✓ Install fresh alkaline batteries with correct polarity.

Temperature station Has Distorted Display

- ✓ On a brand new temperature station, check for thin plastic films of printed scratch guard that may be on the upper and lower screen of the temperature station. This thin piece of plastic has printed numbers for store displays.
- ✓ This film will be easy to peel off the LCD.
- ✓ With all power removed the temperature station should be blank.
- ✓ If numbers still appear, please check for scratch guard.
- ✓ Check that the batteries are installed correctly.
- ✓ This is generally a power related issue.
- ✓ Batteries may be overpowered or underpowered. Remove batteries from the temperature station.
- ✓ Press any button 20 times. Leave the batteries out of the display for 2 hours.
- ✓ Insert fresh alkaline batteries into the temperature station.

Temperature station is Blank: No Letters, Numbers or Dashed Lines

- ✓ Check that the batteries are installed correctly.
- ✓ Batteries may be overpowered or underpowered. Remove batteries from temperature station.
- ✓ Press any button 20 times. Leave the batteries out of the display for 2 hours.
- ✓ Insert fresh alkaline batteries into the temperature station.