M73170 FAQS

We are weather enthusiasts like you and know proper running equipment is important. These FAQS provide valuable information on setup, positioning, and troubleshooting your station. We recommend Adobe Reader version 10 or greater available at: http://get.adobe.com/reader

CONTENTS

BATTERIES: WHAT DO I NEED TO KNOW ABOUT BATTERIES?

- Good fresh batteries are important for the best performance in your sensors and as a backup in your clock.
- Batteries with an expiration date of 2028, were manufactured in 2018.
- We recommend batteries with an expiration date 6 years in advance of the current year for best performance.
- A minimum voltage of 1.48 v per battery is required for best performance.
- Lithium batteries may be used in outdoor sensors. Alkaline batteries for the clock.

SENSOR AND STATIONS

Your M73170 station comes with: TX147TH Sensor 433MHz RF.

WHAT ARE THE POWER REQUIREMENTS FOR THIS STATION?

TX147TH: 2 "AAA" batteries (not included)

M73170: 5-volt power adapter AC6: GPU280500150WAOO
Optional: 3 "AA" batteries for backup

SETUP: HOW DO I SET UP MY STATION?

1. Insert 2-AAA batteries into your Outdoor Sensor.
2. Insert the 5-volt power cord into an outlet, then into your M73170.
   Optional: Insert 3 "AA" batteries for backup.
3. Once the sensor is reading to your station, place it outside in a shaded location to protect it from the sun's heat. Allow up to 10 minutes for sensors to connect.

MOUNTING: WHERE DO I MOUNT/POSITION MY SENSOR?

For Accurate Outdoor Temperature/Humidity Measurements
- Insert a mounting screw through the hole at the top to securely mount the sensor. It can also hang from the back using a nail.
- Mount the sensor vertically in a protected well-shaded area. Keeping it out of direct weather elements such as sunlight, rain, snow, etc. will help avoid inaccurate readings.

- For additional protection against weather elements, a Sensor Weather Shield: https://bit.ly/weather-shield can be purchased separately.
- The maximum wireless transmission range to the station is up to 330ft (100m) in open air. This does not include walls, floors, or other large obstructions.
- For online video instructions visit: bit.ly/th_sensor_mounting

WHERE DO I PLACE MY STATION?

Your station is designed for flexible placement on a desk or countertop, or to position on the wall. When the stand is closed, it provides wall mounting holes.

Position within reach of an outlet that is always active. Some outlets in living rooms and bedrooms may only be active when the light switch is on.

Best reception occurs when only one wall is between your station and each sensor outside. Position your station six feet from other electronics and wireless devices. If you suspect RF (radio frequency) interference, simply move your weather station a few feet.

BUTTON FUNCTIONS

There are 7 function buttons on this weather station. In order:
 ALERTS | TEMP | - (MINUS) | SET/ATOMIC |+ (PLUS) | HEAT/DEW | LIGHT

1. **ALERTS button**
   Normal Time Display-
   - Hold the ALERTS button for 2 seconds to enter alert set mode.

   Alerts Mode-
   - Press to confirm & move to the next alert.

   Factory Reset-
   - Hold the ALERTS and LIGHT button together to reset the station to factory defaults. All historical information will be lost.

2. **TEMP button**
   Normal Time Display-
   - Press and release to view indoor and outdoor HI | LO temperature/humidity records with Time and Date.
   - Hold 2 seconds to search for Outdoor Sensor

   Temp/Humidity Records Mode-
   - Hold the MINUS button for 5 seconds to delete individual temp/humidity records.

3. **– (MINUS) Button:**
   Normal Time Display-
   - Press and release to turn Temperature Decimals off or on

   Settings-
   - Press to decrease values during setting.
   - Hold 2 seconds to quickly adjust values.

   Alert Mode:
   - Press to Arm/Disarm an alert.
   - Press to decrease values during setting.
   - Hold 2 seconds to quickly adjust values.

   Temp/Humidity Records Mode-
   - Hold the MINUS button for 5 seconds to delete individual temp/humidity records.

4. **SET button:**
   Normal Time Display-
   - Hold for 2 seconds to set time/calendar, etc.
   - Press and release to search for Atomic Time Signal

5. **+ (PLUS) Button:**
   Normal Time Display-
   - Press and release to turn Animation (Birds, Stars), and History Graph scroll on or off.

   Setting Mode-
   - Press to increase the values by one.
   - Hold 2 seconds to quickly adjust values.

   Alert Mode:
   - Press to Arm/Disarm an alert.
   - Press to decrease values during setting.
   - Hold 2 seconds to quickly adjust values.

6. **HEAT/DEW button**
   Normal Time Display-
   - Press and release to view Outdoor Heat Index and Dew Point Temperatures.

7. **LIGHT button:**
   Normal Time Display-
   - Press to change the LCD backlight brightness (5 levels)
   - Hold to enter Auto Dim settings.

Settings-
- Press to exit any setting mode.

Factory Reset-
- Hold the ALERTS and LIGHT button together to reset the station to factory defaults. All history information will be lost.

TIME: DOES THIS STATION HAVE ATOMIC TIME?

Yes: The station will search for the atomic signal at UTC 7:00, 8:00, 9:00, 10:00, and 11:00.
- If there is no WWVB reception, the station will search for the atomic time signal every 2 hours until the WWVB time is received.
- The atomic time signal icon will flash while searching. The tower icon will be solid when it has connected.
- From the normal time display, press and release the **SET** button to search for the WWVB time signal.
- Please be sure you have selected your time zone from the list in the Settings menu. When the Atomic time signal is received, the station will be set to the time zone selected. The default is Eastern Time.

Reception:
The Atomic Time Signal originates in Ft. Collins Colorado and has a range of roughly 4800 kilometers (3000 miles). In some cases, the signal is affected by weather conditions, geographic location. dwelling construction materials or electrical interferences. The position of the clock in the home may result in poor reception. If the clock has not synchronized to the correct time within a few days of activation, you may need to move the clock to a different location. It is best to position the clock near an exterior wall that faces toward Colorado. If the Atomic Time Signal is NOT received, your clock will still operate as a reliable accurate clock and should not be considered broken.

For loss of atomic signal, follow these steps:
1. Check for a **Tower Icon** showing on the display near the time. The tower icon indicates the successful reception of the WWVB signal in the past 24 hours.
2. Check that the Weather Station is in the correct **Time Zone**. This station offers seven time zones listed in letter format (default is EST):
    - Atlantic
    - Eastern
    - Central
    - Mountain
    - Pacific
    - Alaskan
    - Hawaiian

3. Check that **ATOMIC** is **ON**. This must be ON to receive a WWVB atomic time signal.
4. Check that the **DST** indicator is on **AUTOMATIC DST**. If the indicator is NO DST the weather station will not change into or out of Daylight Saving Time.
5. Position the station with front or back facing Fort Collins, Colorado so the widest part of the antenna is positioned to receive.
• For information about Atomic Time visit: https://bit.ly/atomic_time

HOW DO I MANUALLY SET THE TIME?

Note: Only press or hold one button at a time.

1. Hold the **SET** button for 2 seconds to enter settings mode.
2. Press the **+** or **-** button to adjust the flashing values.
3. Hold the **+** or **-** button to adjust quickly.
4. Press the **SET** button to confirm adjustments and move to the next item.
5. Press the **LIGHT** button at any time to exit.

Settings Order:
• Greeting HELLO
• Language (English, Spanish, French, German)
• Beep ON/OFF
• Atomic ON/OFF
• DST: AUTOMATIC ON/ALWAYS ON/ALWAYS OFF
• Time Zone
• 12HR/24HR
• Hour
• Minutes
• Seconds
• Year
• Month
• Date
• Fahrenheit/Celsius
• Decimals ON/OFF
• Pressure: InHg / hPa
• Pressure number setting
• THANK YOU

TIME ZONES
ATLANTIC
EASTERN
CENTRAL
MOUNTAIN
PACIFIC
ALASKA
HAWAII

Settings Menu

1. Hold the SET button for 2 seconds to enter setting mode. HELLO, will show for two seconds, then automatically move to language. **ENGLISH** will show. Press the + or - button to change to another language (Español, or Français, or Deutsch). Press the SET button to select Beep ON/OFF.

2. BEEP ON will show. Press the + or – button to turn the beep sound OFF. Press the SET button to move to Atomic Time ON/OFF.
3. Press SET to confirm and move to the atomic time ON/OFF. **ATOMIC ON** will show. ON flashes. Use the + or - button if you do not want an Atomic Time signal (OFF).
4. Press SET to confirm and move to the Daylight-Saving Indicator. **DST AUTOMATIC ON** will show. USE the + or - button to Select DST ALWAYS ON (DST all year) or DST ALWAYS OFF (Standard Time all year).
5. Press SET to confirm and move to the Time Zone. **EASTERN** will flash. Use the + or - button to select your time zone.
6. Press SET to confirm and move to 12/24-hour time. **12 Hr. FORMAT** will show. Press the + or - button to turn select the 24-hour time format.
7. Press SET to confirm and move to the hour. **HOUR** will show. The hour flashes. Press the + or - button to choose the hour.
8. Press SET to confirm and move to the minutes. **MINUTES** will show. Minutes flash. Press the + or - button to choose the minutes.
9. Press SET to confirm and move to the seconds. **SECONDS** will show. Seconds flash. Press the + or - button to set the seconds.
10. Press SET to confirm and move to the year. The **YEAR 2023** will show. The year will flash. Press the + or - button to change the year.
11. Press SET to confirm and move to the month. The **MONTH JAN** will show. The Month will flash. Press the + or - button to change the month.
12. Press SET to confirm and move to the date. The **DATE** will show. The date will flash. Press the + or - button to change the date.
13. Press SET to confirm and move to the temperature unit. **FAHRENHEIT** will show. Press the + or - button if you prefer Celsius.
14. Press SET to confirm and move to the temperature decimal ON or Off. **DECIMAL ON** will show. Press the + or - button if you prefer Decimal OFF.
15. Press SET to confirm and move to pressure units. **PRESSURE** will show. **INHG** will flash. Press the + or - button to select HPA.
16. Press SET to confirm and move to adjust the pressure number. **PRESSURE SET** will show. **The pressure number** will flash. Press the + or - button to adjust the pressure number.
17. Press SET to confirm. **THANK YOU** shows for 2 seconds, then exit the setting menu.

Note: After 10 seconds with no button press, the station returns to normal time display.

HOW MANY TIME ZONES ARE AVAILABLE?

Seven Selectable Time Zones from:
ATLANTIC, EASTERN, CENTRAL, MOUNTAIN, PACIFIC, ALASKA, & HAWAII

WHAT ARE THE DAYLIGHT SAVING TIME (DST) SETTINGS?

AUTOMATIC DST = Changes automatically in the spring and fall

ALL YEAR DST = DST all year around

NO DST = Standard time all year around

WEEKDAY: HOW DO I CORRECT THE DAY OF THE WEEK?

The day of the week will be set when the Year, Month, and Date are set. If your day of the week is incorrect, yet the month and date are correct, please go to the program menu and check the YEAR setting.
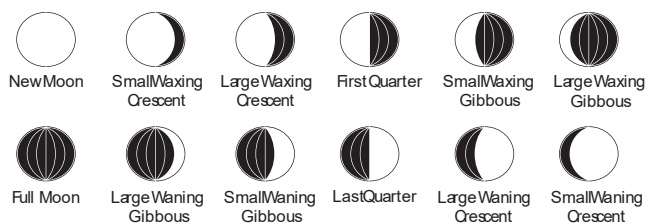
DOES THIS STATION HAVE 12-HOUR AND 24-HOUR TIME OPTIONS?

Yes, you can select 12-hour or 24-hour time format in the program menu.

WHAT ARE THE MOON PHASES?

The Moon Phase will show from 7:00 pm to 6:59 am for any forecast.
- The moon phase is based on the Lunar calendar.
- In the settings menu, the moon phase will change as year, month, and date are set.

| New Moon | Small Waxing Crescent | Large Waxing Crescent | First Quarter | Small Waxing Gibbous | Large Waxing Gibbous |

| Full Moon | Large Waning Gibbous | Small Waning Gibbous | Last Quarter | Large Waning Crescent | Small Waning Crescent |

FORECAST ICONS: WHAT DO THE FORECAST ICONS MEAN?

The unit predicts weather conditions for the next 12 – 24 hours based on the change in atmospheric pressure. The weather forecast is based on atmospheric pressure change and is about 70-75% correct. When the Outdoor temperature is below 32 F and the forecast is RAIN or T-STORM, the LCD will display SNOWY.

Forecast Icons:
- Sunny
- Partly Cloudy
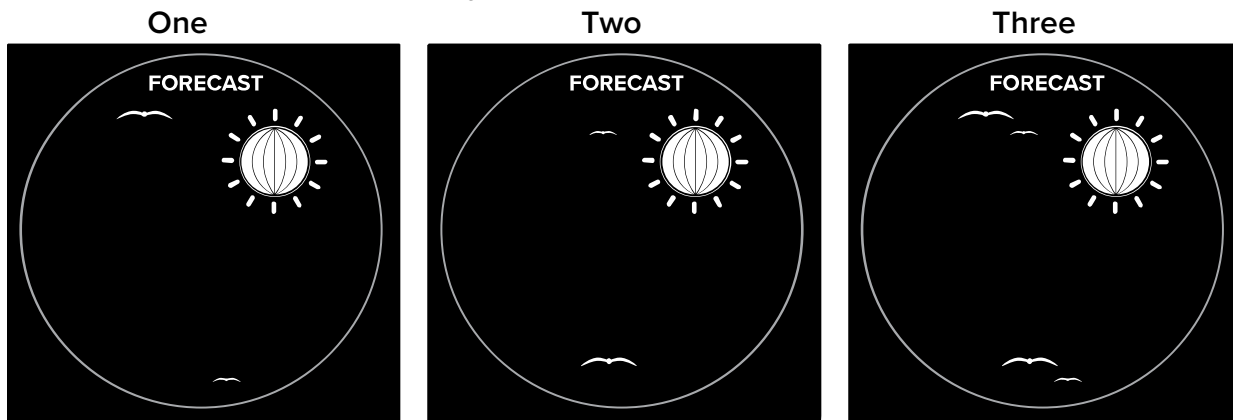- Cloudy
- Rain
- T-Storm
- Snow

Your station calibrates barometric pressure based on its location over time to generate an accurate, personal forecast. Please allow 7-10 days for barometer calibration.
Note: As the Station builds memory, it will compare the current average pressure to the past forty-day average pressure for increased accuracy. The longer the Station operates in one location the more accurate the forecast icons will be.
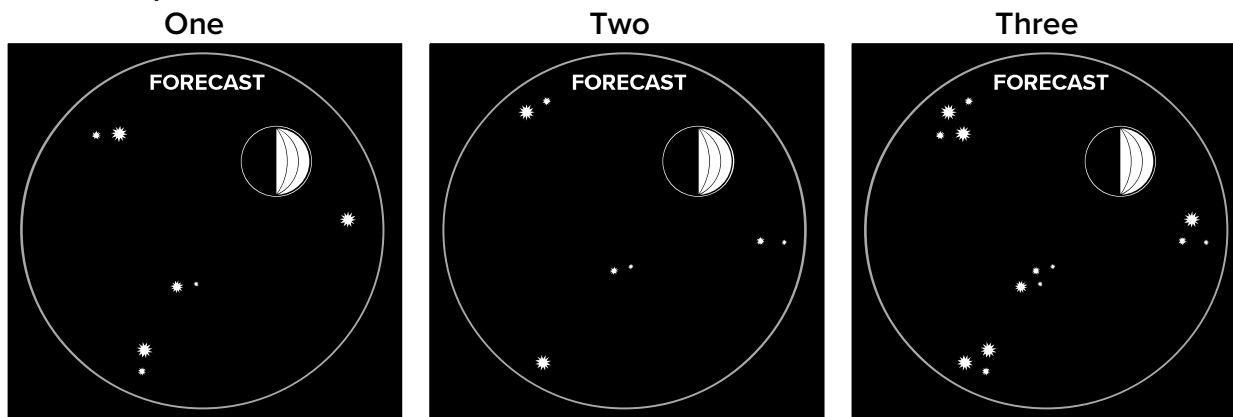
EXPLAIN THE ANIMATED FORECAST.

When the Forecast is Sunny you will see **Animated Birds** between 7:00 am-6:59pm and **Animated Stars** from 7:00pm-6:59am. The animation will be in 3 stages and last for 2 seconds each then repeat.
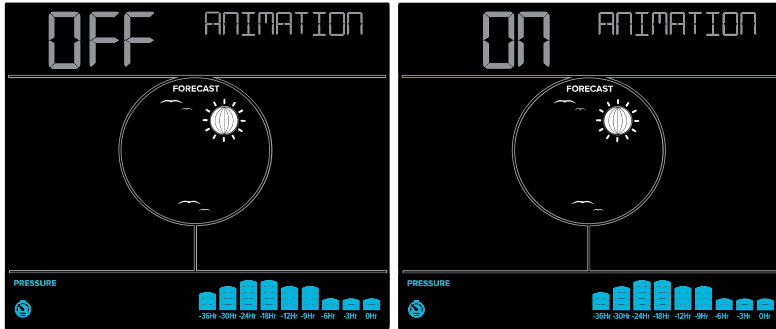
Birds 7:00am-6:59pm with Sunny Forecast

One	Two	Three

Stars 7:00pm-6:59am with Clear Forecast

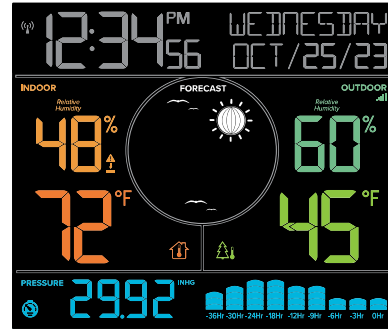| One	Two	Three

From Normal display press and release the PLUS button to turn animation off.   When animation is off you will see all the birds or all the stars. Press and release the PLUS button again to turn animation back on.
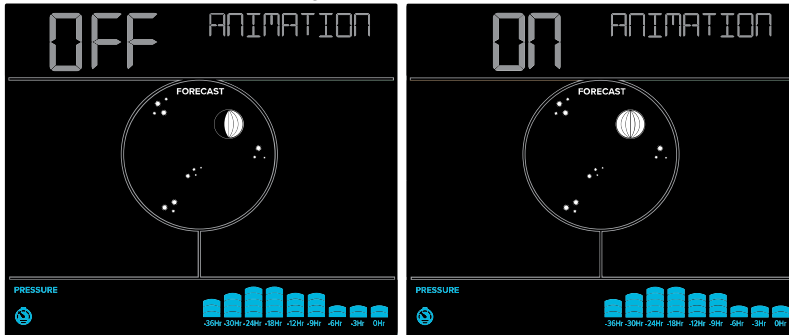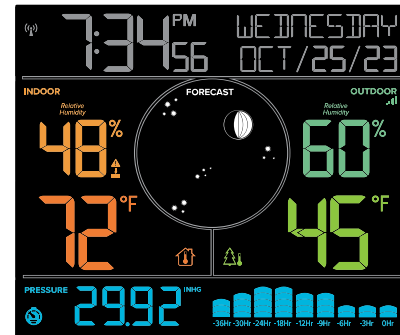
From 7am to 6:59pm you will see: **When Off: All birds will be still.**
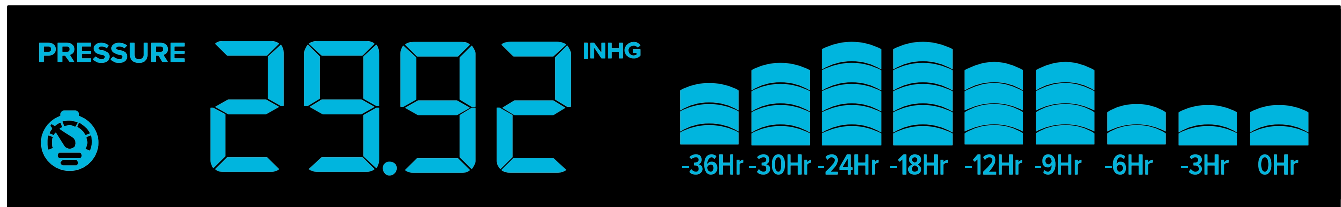

From 7pm to 6:59am you will see: **When Off: All stars will be still.**

Pressure History Graph will not scroll if animation is turned off.

PRESSURE NUMBER AND PRESSURE HISTORY GRAPH

- Barometric pressure is read by the station every 12 seconds.
- Default reading is: InHg 29.92 InHg (1013 hPa)
- The Pressure Number is programmable in the settings menu.

1. The bar graph shows in hPa (Hecto Pascal), the recorded air pressure over the past 36-hours.
2. The horizontal axis shows the hours at increments of: -36 hours, -30 hours, -24 hours, -18 hours, -12 hours, -9 hours, -6 hours, -3 hours, and 0 hours (current).
3. The "0h" on the horizontal axis indicates the current hour, thus the current air pressure also.
4. Each bar on the bar graph represents a value of 0.03 hPa.

5. At every full hour, the current air pressure is used as a basis for the display of a new graph bar.
6. Air pressure trends can be determined by simply glancing at the bar graph.
a. If the bars are rising (higher on the right than the left) then the air pressure has a rising trend, and the weather should improve.
b. If the bars are dropping (lower on the right than the left) then the air pressure has a falling trend, and the weather should worsen.
7. The bar chart will constantly scroll for visual interest unless Animation is turned Off by pressing and release the PLUS button.

DOES THIS STATION HAVE A BACKLIGHT?

Yes, your color station has a backlight with 5 levels of intensity (OFF, 1, 2, 3, 4). Power cord use is required for this station to receive updates from the sensors.
- Press and release the LIGHT button to adjust the backlight intensity or to turn it off.
- Intensity levels: 0% (OFF) | 1.5% | 20% | 50% | 100%

WHAT IS AUTO DIM BACKLIGHT?

AUTO DIM allows you to set a time for your backlight to dim to level 1 and then return to level 5. This is a handy feature to dim the backlight at the same time every night for sleep.

Set Auto Dimming Hour only.
1. Hold the LIGHT button for 2 seconds to enter dimmer set mode.
2. **AUTO DIM OFF** will show.
3. Press the + or – buttons to turn dimmer (ON). **AUTO DIM ON** will show.
4. Press the LIGHT button to select start time (Hour) for dimmer. **AUTO DIM START TIME** and the **hour** will flash.
5. Press the + or – buttons to change the hour for the dimmer to be low light level.
6. Press the LIGHT button to select the start time for dimmer to be on High light level. AUTO DIM **STOP TIME** and the **hour** will flash.
7. Press the + or – buttons to change the hour for the dimmer to be high light level.
8. Press the LIGHT button to confirm exit.

Note: Hold LIGHT button at any time to exit dimmer settings.

While Auto Dim is active:
- Press and release the LIGHT button to adjust the backlight for 10 seconds. Intensity Levels: 0FF | 1.5% | 20% | 50% | 100%.
- If you change the backlight setting the station will stay on the new setting and will automatically go back to the auto dim on the next start point.

WHY DOESN'T THE TEMPERATURE/HUMIDITY READINGS ON MY STATION MATCH THE WEATHER REPORT?

- Your temperature and humidity readings are from your sensor at your location. Your local reporting station can be miles away so readings will differ.

WHAT DOES A READING OF "HI" OR "LO" MEAN?

- If your outdoor temperature reading shows "HI" or "LO", check that your batteries are good.
- Overpowered or underpowered batteries can cause this reading.
- If batteries are good, replace the outdoor sensor.
- If your temperature is fine but your humidity is reading "HI" or "LO" or dashes, your humidity may be below 10% Relative Humidity. Your sensor does not read below 10% humidity.

WHAT DOES "**NO**" MEAN?

- If a sensor loses connection to the station for any reason, the station will show **NO** after 30 minutes.
- The station will search for 3 minutes every hour to reconnect with sensor.
- Hold the **TEMP** button 2 seconds to search for the sensors in the Outdoor Area
- Icon will flash while searching for sensor. Outdoor area will show dashes during the search. When sensor is received the icon will be solid.
- If no sensor received, icon disappears after 3 minutes of searching if sensor is not found.
- **NO** will again show in the outdoor sensor area.

WHY DOES MY TEMP/HUMIDITY READING COME AND GO?

- RF (radio frequency) communication may come and go occasionally. This can be normal in some environments (e.g., moister climates).
- If a sensor goes out, please wait 2-4 hours for it to reconnect on its own. Please be patient – these stations can reconnect on, after many hours out.
- RF (radio frequency) communication is not always 100% on. Certain temporary conditions can cause it to go out for a time (e.g., 100% humidity).

If a miss happens:
- If sensor loses connection to the station for any reason, the station will show NO after 30 minutes.
- The station will search for 5 minutes every hour to reconnect with sensor.
- Be sure you have good batteries. Manually search for your sensor.

Try this:
- Bring your sensor within 10 feet of your station and make sure it is connected to the station.

- After 15 minutes move the sensor into the next room with a wall between the sensor and the station for 1 hour.
- If there is no loss of signal in that hour, move the sensor just outside.
- Continue moving the sensor back to its original location.
- If you lose connection, look for sources of interference.

WHAT IS DISTANCE | RESISTANCE | INTERFERENCE?

Distance:
- The maximum transmitting range in open air is over 330 feet (100 meters) between each sensor and your station.
- Consider the signal path from your station to each sensor as a straight line.
- Consider the distance the station is from other electronics in the home.

Resistance:
- Each obstacle: walls, windows, vegetation, stucco, concrete, and large metal objects will reduce the effective signal range by about one-half.
- Mounting your sensors on a metal fence can significantly reduce the effective signal range.

Interference:
- Consider electronics in the signal path between the sensors and your station.
- Simple relocation of the sensors or the station may correct an interference issue.
- Windows can reflect the radio signal.
- Metal will absorb the RF (radio frequency) signal.
- Stucco held to the wall by a metal mesh will cause interference.
- Transmitting antennas from: ham radios, emergency dispatch centers, airports, military bases, etc. may cause interference.
- Electrical wires, utilities, cables, etc. may create interference if too close.

CAN I CHANGE BATTERIES IN MY SENSORS WITHOUT LOSING DATA?

We designed this station for convenience, so that a simple change of batteries does not lose data or require you to power down your station.
- When Battery Indicator shows in the Outdoor Sensor area, replace batteries in your Outdoor Sensor.
- Then hold the **TEMP** button for 3 seconds and your station will search for your sensor.
- When changing the batteries in the color station, continue using the power cord. After replacing the batteries, no other action is needed. The batteries in the station only maintain time/date in the event of a power outage.

FACTORY RESET: HOW DO I FACTORY RESET MY STATION?

To factory reset your M73170:
1. Hold the **ALERTS & LIGHT** buttons together for 5 seconds.
2. When your station resets it will look for the sensor. Allow at least ten minutes to reacquire the sensor.

HOW DO I VIEW MY HI AND LO HISTORY READINGS?

Your high and low temperature and humidity readings are recorded with time and date of occurrence. Each time a new high or low reading is recorded, that reading with time and date of occurrence will show.

From normal display, press and release the **TEMP** button to view indoor and outdoor HI | LO temperature/humidity records.

Viewing order:
- Outdoor HI Temp with Time/Date
- Outdoor LO Temp with Time/Date
- Outdoor HI Humidity with Time/Date
- Outdoor LO Humidity with Time/Date

- Indoor HI Temp with Time/Date
- Indoor LO Temp with Time/Date
- Indoor HI Humidity with Time/Date
- Indoor LO Humidity with Time/Date

Reset History Readings (each reset individually):
- Press the TEMP button to view individual readings.
- Hold the MINUS button for five seconds to reset the individual value.

HOW DO I VIEW HEAT INDEX AND DEW POINT?

Press and release the HEAT/DEW button to view current Heat Index, then Dew Point Temperature.

Heat Index:
Heat Index combines the effects of heat and humidity. Heat index will be the same number as the Outdoor Temperature until the outdoor temperature is above 26.7°C (80°F).

Dew Point Temperature:
Dew Point Temperature is the saturation point of the air, or the temperature to which the air must cool to create condensation. The higher the dew points, the higher the moisture content of the air at a given temperature. Dew Point is lower than the actual temperature.

HOW DO I SET ALERTS?

HI ALERT ⚠   **LO ALERT** ⚠

Important:
- Alerts are defaulted to be OFF.
- Leave an alert OFF (disarmed) press the ALERT button to skip setting that alert value.
- The alert icon will show when the alert is active.
- When armed alert value is reached, station will beep 5 times each minute, until out of alert range. The flashing alert icon will indicate it is a LO or HI alert.
- Press any button to stop the temp alert sound. The alert icon will flash while value is in alert range.

Set Alerts:
1. Press and hold the ALERTS button 2s to enter alert set mode.
2. Press and release the + or – button to turn alert ON/OFF
3. If alert is ON, the alert value is flashing. Use the + or – buttons to set. Hold the + or – buttons to scroll quickly.
4. Press and release ALERTS button to move to next item.
5. Leave an alert OFF (disarmed) and press the ALERTS button to skip setting that alert value
6. The alert icon will show when the alert is active.
7. When armed alert value is reached, station will beep 5 times each minute, until out of alert range.(1 second beep once, sound for 5 seconds, wait 55 seconds and then repeat began to ring for 5 seconds.)
8. The flashing alert icon will indicate if it is a LO or HI alert.
    9. Press any button to stop the temp alert sound. The alert icon will flash while value is in alert range

Alert Setting Order:
- Outdoor LOW Temperature ON/OFF
- Outdoor HIGH Temperature ON/OFF
- Outdoor LOW Humidity ON/OFF
- Outdoor HIGH Humidity ON/OFF
- Indoor LOW Temperature ON/OFF
- Indoor HIGH Temperature ON/OFF
- Indoor LOW Humidity ON/OFF
- Indoor HIGH Humidity ON/OFF