616-1410B & 616-41667 FAQS

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

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BATTERIES: WHAT DO I NEED TO KNOW ABOUT BATTERIES?

- Good fresh batteries are important for best performance in your sensor and as 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.

HARDWARE: SENSORS AND CLOCK

Your 616-1410B & 616-41667 clocks come with:
TX141TH-Bv3 433MHz RF.

WHAT ARE THE POWER REQUIREMENTS FOR THIS CLOCK?

TX141TH-Bv3: 2 "AA" batteries

Clock: 5-volt power adapter AC6: GPU280500150WAOO
Optional: 3 "AAA" LR3 Batteries

SETUP: HOW DO I SETUP MY CLOCKS?

1. Insert 2-AA batteries into your Outdoor Sensor.
2. Insert the 5 volt power cord into an outlet, then into your 616-1410. Optional: Insert 3-AA batteries for backup.
3. Once the sensor is reading to your clock, 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?

- Watch sensor mounting video: http://bit.ly/TH_SensorMounting
- Place your thermo-hygro sensor at least 6 feet off the ground.
- For accurate temperature readings your sensor needs to be shaded from the sun and in a well ventilated area. Trapped moisture will cause inaccurate readings.
- Mount your sensor vertically to allow moisture to drain out the bottom.
- Preferred location is on a north facing wall under an eave or deck rail.
- Avoid placing near a metal roof that will cause it to read high on sunny days.
- Avoid other sources of heat such as soffit vents, and window or door frames.

- For accurate humidity readings, avoid placement near vegetation and lakes or other bodies of water when possible.
- Maximum transmission distance from your thermos-hygro sensor to your clock, in open air is 330 feet (100 meters).
- Insert the mounting screw through the front of the transmitter and into the wall. Tighten the screw to snug (do not over tighten).

WHERE TO I PLACE MY CLOCK?

- Your clock is designed for flexible placement on a desk or countertop.
- Position within reach of an outlet that is always active. Some outlets in living rooms and in bedrooms may only be active when the light switch is on.
- Best reception occurs when only one wall is between your clock and each sensor outside.
- Position you clock six feet from other electronics and wireless devices. If you suspect RF (radio frequency) interference, simply move your clock a few feet.

BUTTON FUNCTIONS

There are 7 function buttons on this clock.

1. **SNOOZE/SNOOZE/LIGHT button**
   Normal Time Display-
   o Press to adjust backlight 5 levels (OFF, 1, 2, 3, 4)
   o Hold to select Auto Dim settings.

   Alarm Sounds-
   o Press to snooze alarm for 10 minutes

   Settings-
   o Press to exit any setting menu

2. � **PROJECTION button**
   Normal Time Display-
   o Press to change projection intensity (HI, LOW, OFF)
   o Hold to change what is projected

3. **ALARM button**
   Normal Time Display-
   o Press to activate/deactivate time alarm
   o Hold to set alarm time

4. CALENDAR button
   Normal Time Display-

   - Press to change Calendar Mode
     - THURSDAY
     - THU 10/29
     - Alarm Time

5. -(MINUS) button:
   Setting-

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

6. SET button:
   Normal Time Display-

   - Hold for 2 seconds to enter Settings Menu
   - Press to search for Atomic Time Signal

   Settings Menu:

   - Press and release to confirm setting and move to next item or exit

7. +(PLUS) button:
   Normal Time Display-

   - Hold to search for outdoor sensor.

   Settings-

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

8. ROTATE wheel
   Normal Time Display-

   - Spin to rotate projection image

TIME: DOES THIS CLOCK HAVE ATOMIC TIME?

- The clock will search for the atomic signal at power up and at UTC 7:00, 8:00, 9:00, 10:00, and 11:00.
- If there is no WWVB reception, the clock 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 normal time display, press 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 clock will set to the time zone selected. Default is Eastern Time.

Reception:
- The WWVB time signal can be received up to 2,000 miles away from Boulder Colorado. However, due to the nature of the Earth's Ionosphere, reception is very limited during daylight hours. The Radio-controlled display will search for a signal every night when reception is best.
- Allow up to 5 nights for the change from Daylight Savings Time to Standard Time and vice-versa to occur, depending on your location and atmospheric conditions.

Loss of WWVB signal, follow these steps:
1. Check for a **Tower Icon** showing on the display near the time. The tower icon indicates successful reception of the WWVB signal in the past 24-hours.
2. Check that the Clock is in the correct **Time Zone**. This clock offers seven time zones listed in letter format (default is EASTERN):
    - 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 AUTO** indicator is **ON**. If the indicator is OFF the clock will not change into or out of Daylight Saving Time.
5. Position clock with front or back facing Fort Collins, Colorado so the widest part of the antenna is positioned to receive.
- For information about WWVB visit: http://bit.ly/AtomicTime

HOW DO I MANUALLY SET THE TIME?

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

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

Settings order:
- Language (English, Spanish, French, German)
- Beep ON/OFF
- Atomic ON/OFF
- DST AUTO/ DST OFF / DST ON
- Time Zone
- 12/24 Format
- Hour
- Minutes
- Year
- Month
- Date
- Month/Date or Date/Month
- Fahrenheit/Celsius

Note: If Atomic OFF is selected, skip DST and Time Zone selection and move straight to the 12/24 Hour.

Settings Menu
1. Hold the SET button for 2 seconds to enter setting mode. **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 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 Atomic Time signal (OFF).
4. Press SET to confirm and move to the Daylight Saving Indicator. **DST AUTO ON** will show. USE the + or - button to Select DST ON (DST all year) or DST 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. **12/24 FORMAT** will show. 12HR flashes. Press the + or - button to turn select 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 year. The **YEAR 2020** will show. Year will flash. Press the + or - button to change the year.
10. Press SET to confirm and move to the month. The **MONTH** will show. The Month will flash. Press the + or - button to change the month.
11. Press SET to confirm and move to the date. **DATE** will show. Date will flash. Press the + or - button to change the date.

12. Press SET to confirm and select MONTH/DATE or DATE/MONTH. MONTH/**DATE** will show. Press the + or - button to select DATE/MONTH.
13. Press SET to confirm and move to Fahrenheit/Celsius. The **MONTH** will show. The Month will flash. Press the + or - button to change the month. Press SET to confirm and exit.
Note: After 10 seconds with no button press, 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?

- DST AUTO- Clock gains 1 hour in spring and loses 1 hour in the fall (default)
- DST ALWAYS ON- Clock remains in Daylight Saving Time all year long
- DST ALWAYS OFF- Clock remains in Standard Time all year long

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

- The day of the week will 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 the program menu and check the YEAR setting.

DOES THIS CLOCK HAVE 12 HOUR AND 24 HOUR TIME OPTIONS?

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

DOES THIS CLOCK HAVE A BACKLIGHT?

Yes, your color clock has a backlight with 5 levels of intensity (OFF, 1, 2, 3, 4). Power cord use is required for this clock to receive updates from the sensors.
- Press and release the SNOOZE/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?

Color Clock:
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 Dim (Hour only).
1. Hold the SNOOZE/LIGHT button 2 seconds to enter dimmer set mode. **AUTO DIM OFF** will show.

2. Press the + or – buttons to turn dimmer (ON). **AUTO DIM ON** will show.
3. Press the SNOOZE/LIGHT button to select start time (Hour) for dimmer. **START TIME** and the **hour** will flash.
4. Press the + or – buttons to change the hour for the dimmer to be low light level.
5. Press the SNOOZE/LIGHT button to select start time for dimmer to be on High light level. **STOP TIME** and the **hour** will flash.
6. Press the + or – buttons to change the hour for the dimmer to be high light level.
7. Press the SNOOZE/LIGHT button to confirm exit.

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

WHERE DID MY CALENDAR GO?

Press and release the CALENDAR button to change the Calendar and view Alarm time. Your clock will stay on your selection.

Calendar Options:
o Full Weekday
o THU 10/29
o Alarm Time

HOW DO I SET MY TIME ALARM?

Set Alarm:
1. Hold the **ALARM** button to enter settings mode.
2. Press the **+** or **-** button to adjust the flashing values.
3. Hold the **+** or **-** buttons to adjust quickly.
4. Press the **ALARM** button to confirm adjustments and move to the next item.
5. Press the **SNOOZE** button at any time to exit.

Note:
1. If no buttons are pressed in a 10 second period, set mode will time out and return to live display mode, reflecting whatever adjustments were made by user before timed out
2. Alarm is crescendo sound. When the alarm sounds, it continues for 2 minute and then shuts off completely.

Important:
- When Alarm is set, the Alarm Time will automatically show.
- Press the CALENDAR button to view the Calendar instead of Alarm Time.

Activate/Deactivate Alarm:
- The alarm is active when set.
- Press the ALARM button to deactivate or activate the alarm. The alarm time will show for 2 seconds.
- Alarm icon (bell) will show then active.

Snooze:
- When alarm sounds, press the SNOOZE/LIGHT button to silence alarm for 10 minutes.
- The Snooze Icon **Zz** will flash.
- Press any button except SNOOZE/LIGHT to silence the alarm for 24 hours.
- When alarm ends by button press or time out after 2 minutes, GOOD DAY will show for 2 seconds then return to normal time display.

WHAT ARE MY PROJECTION OPTIONS?

Projection Options:
- Time only
- Indoor Temp only
- Outdoor Temp only
- Alternate Time + Indoor Temp + Outdoor Temp

INDOOR TEMP   **OUTDOOR TEMP**   **TIME**

72.2 °F   12.5   12:34
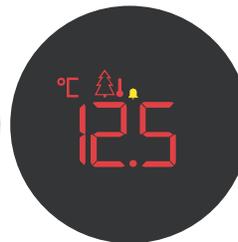
Change Projection Options:
1. Hold the PROJECTION button to enter Projection Settings.
2. Use the PLUS or MINUS button to change projection selection (each selection will show for 2 seconds).
3. Projection image will stay on last option selected.

CAN I CHANGE THE BRIGHTNESS OF THE PROJECTION?

- Press the PROJECTION button to change the brightness (HI-LO-OFF).

CAN I CHANGE THE ORIENTATION OF THE PROJECTION?

- Move the Projection Arm backward or forward to project on the wall or ceiling.
- Use the Rotation Wheel on the back of the projection arm to change the projection orientation 270 degrees.

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

- Your temperature and humidity readings are from your sensor at your location. Your local reporting clock 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 clock for any reason, the clock will show **NO** after 30 minutes.
- The clock will search for 3 minutes every hour to reconnect with sensor.
- Hold the **+** button 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 TEMPERATURE READINGS 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 clocks 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 clock for any reason, the clock will show NO after 30 minutes.
- The clock will search for 3 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 clock and make sure it is connected to the clock.
- After 15 minutes move the sensor into the next room with a wall between the sensor and the clock 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 clock.
- Consider the signal path from your clock to each sensor as a straight line.
- Consider the distance the clock 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 clock.
- Simple relocation of the sensors or the clock 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 clock for convenience, so that a simple change of batteries does not lose data or require you to power down your clock.
- When Battery Indicator shows in the Outdoor Sensor area, replace batteries in your Outdoor Sensor.
- Then hold the + button and your clock will search for your sensor.
- When changing the batteries in the color clock, continue using the power cord. After replacing the batteries, no other action is needed. The batteries in the clock only maintain time/date in the event of a power outage.

FACTORY RESET: HOW DO I FACTORY RESET MY CLOCK?

For best results please bring the outdoor sensor in the house and place 5 feet from the display unit.

1. Remove batteries from the sensor and batteries (and/or a/c cord) from the display.
2. With the power removed, press one of the buttons on the display at least 20 times to clear all memory. Please do this even if the display is blank to remove any random electricity. Verify the display is blank.
3. Please be sure you are using fresh batteries testing to a minimum of 1.48, on a voltmeter that reads in numbers. Place batteries into the outdoor sensor first. Make sure they are installed according to the diagrams in the battery compartment.
4. Install batteries (or a/c cord) into the clock according to the diagram in the battery compartment.
5. Allow the sensor and display to remain 5 feet apart for 15 minutes to establish a strong connection. Do not press buttons during this time. You should see a reading on the outdoor temperature area in the first minute.