

**Installation Instructions**  
*Please Read Before Installing*

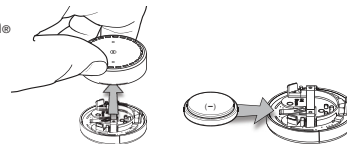
**Wireless Temperature Sensor**  
LRF2-TWRB  
3 V<sup>==</sup> 7 μA 434 MHz

**Important Notes**

- The Wireless Temperature Sensor is part of a system and is used to control HVAC equipment with a compatible HVAC Controller (LR-HVAC). Up to 4 Wireless Temperature Sensors may be used per HVAC Controller (temperature will be averaged between the Wireless Temperature Sensors installed).
- A Wired Return Air Duct Sensor **MUST** be wired to the HVAC Controller. Refer to the HVAC Controller Instruction Sheet (P/N 041299) for more information. The Wired Return Air Duct Sensor is a backup temperature sensor in case the battery drains in the Wireless Temperature Sensor.
- Clean Sensor with a soft damp cloth only. DO NOT** use any chemical cleaners.
- The Wireless Temperature Sensor is intended for indoor use only. Operate between 32 °F and 104 °F (0 °C and 40 °C).
- DO NOT** paint Wireless Temperature Sensor.
- Use only high-quality lithium batteries, one (1) size CR2450, 3 V<sup>==</sup> (ANSI-5029LC, IEC-CR2450). **DO NOT** use rechargeable batteries. Using improperly rated batteries could damage the Wireless Temperature Sensor.  
**NOTICE:** DO NOT disassemble, crush, puncture, drop on a hard surface, subject to high heat, place in water, incinerate, or alter batteries in any way. Please dispose of batteries in compliance with all applicable legal requirements. Your waste disposal provider may have information regarding any state or local restrictions on battery disposal.
- California residents:**  
The batteries in these devices contain Perchlorate Material – special handling may apply. For more information visit [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)

**Getting Started**

- Before setting up the Wireless Temperature Sensor, the Lutron® HVAC Controller (LR-HVAC) should be installed. Refer to the HVAC Controller Instruction Sheet (P/N 041299).
- Insert battery with the negative (-) side up toward the back of the unit. (5-year battery life expected.)

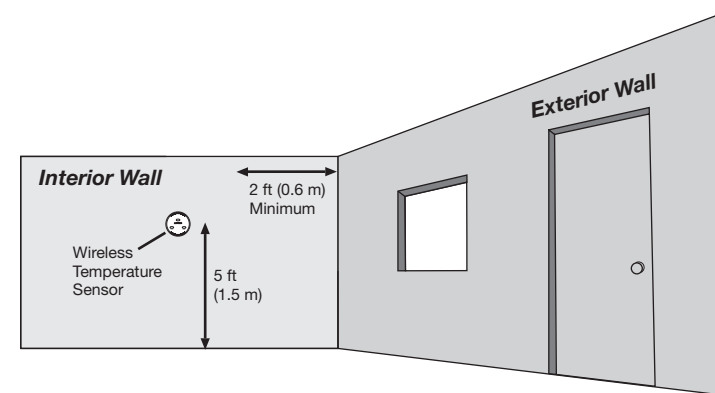


**Wireless Temperature Sensor Placement**

The Wireless Temperature Sensor should be installed in a location that best represents the temperature of the room or area that it is controlling. Determine the Wireless Temperature Sensor placement using the following recommendations and diagram.

If using one Wireless Temperature Sensor, place near an HVAC return grill, 5 ft (1.52 m) up from the floor.

- DO NOT place the Wireless Temperature Sensor** on or within 2 ft (0.6 m) of an exterior wall
- DO NOT place the Wireless Temperature Sensor** in corners or behind doors
- DO NOT place the Wireless Temperature Sensor** in direct sunlight
- DO NOT place the Wireless Temperature Sensor** within 4 ft (1.2 m) of HVAC supply vents
- DO NOT place the Wireless Temperature Sensor** within 4 ft (1.2 m) of light bulbs or any heat source
- DO NOT place the Wireless Temperature Sensor** within 6 in (15 cm) of other RF devices



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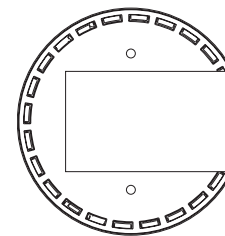
**Temporary Mounting Methods**

If you are uncertain about correctly positioning the Wireless Temperature Sensor, the following temporary mounting and testing procedures are recommended to verify proper performance before permanently installing the Wireless Temperature Sensor.

**Temporary Mounting**

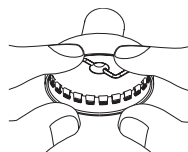
Use this procedure if the Wireless Temperature Sensor will be mounted on a solid wall such as drywall, plaster, concrete, or wood. One 3M™ Command™ adhesive strip is provided for temporarily mounting and testing the Sensor on smooth, solid wall surfaces. This strip is designed for easy, damage-free removal and is not reusable. This strip should not be used for permanently mounting the Wireless Temperature Sensor (see **Permanent Mounting Methods**). Carefully follow the removal instructions below to ensure the wall is not damaged during removal.

**NOTE: DO NOT** use the adhesive strip on wallpaper, as they will likely cause damage to the wallpaper upon removal.



**NOTE:** Leave the removal tab exposed past the edge of the bracket so it can be accessed for removal later.

- Peel the **red** “Command Strip” liner off of the adhesive strip, and apply the strip to the flat side of the mounting bracket as shown in the diagram. Press firmly.
- Identify a location for the Wireless Temperature Sensor (see section **Wireless Temperature Sensor Placement**).
- Remove the **black** “wall side” liner from the adhesive strip.
- Position the mounting bracket on a clean, dry, dust-free wall and press firmly for several seconds.
- Attach the Wireless Temperature Sensor to the mounting bracket.
- If the Wireless Temperature Sensor does not perform satisfactorily from this location, it may be moved to another location. Simply remove the temporary mounting strip, follow steps 1 and 2 in the section **Removing Temporary Mounting Strip**, and repeat steps 1 to 6 in the section **Temporary Mounting**.

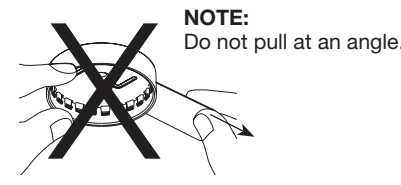
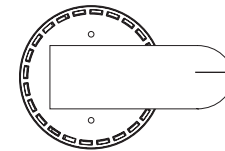


- If the Sensor’s performance is satisfactory, it should be permanently attached to the wall, as described in section **Permanent Mounting Methods**.

**Removing Temporary Mounting Strip**

- Remove the Wireless Temperature Sensor from the mounting bracket by pulling the Wireless Temperature Sensor away from the sensor mounting bracket.
- To remove the bracket from the wall, firmly hold the mounting bracket with one hand and grasp the removal tab on the adhesive strip with the other hand. Pull the tab **VERY SLOWLY** straight across the wall, stretching the strip until the bracket releases from the wall. Discard the strip. **NEVER** pull the strip at an angle, as it may break or damage the wall surface.

**NOTE:** Pull very slowly.



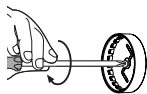
**NOTE:** Do not pull at an angle.

**Permanent Mounting Methods**

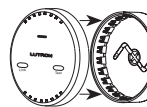
Do not permanently mount the Wireless Temperature Sensor unless you have successfully completed **Testing the Wireless Temperature Sensor** and the system performs to your satisfaction.

**Permanent Mounting**

- Drill one 3/16 in (4.6 mm) pilot hole for the provided screw anchor.
- Press the anchor into the hole and tap flush with a hammer.
- Place the flat side of the mounting bracket against the wall and install provided screw using a hand screwdriver.
- Attach the Wireless Temperature Sensor to the mounting bracket.



**NOTE:** Do not over-tighten



**Programming by a Lutron® Factory Trained Installer**

For full functionality, the HVAC Controller must be programmed to a Repeater and PC software must be used by a Lutron® factory-trained installer. For questions on how to become a qualified installer, please contact your local Lutron® representative.

**RadioRA® 2 Temporary Programming**

Since the HVAC system may need to function before a Lutron® factory-trained installer is available for programming, temporary programming may be used to provide climate control. When using the temporary programming method, the HVAC controller (LR-HVAC) will only function when programmed to a system with a seeTemp™ Wall Display (LRD-WST).

To complete the temporary programming (steps below), the following are required: RadioRA® 2 Main Repeater (RR-MAIN-REP) within 30 ft (9 m) of the HVAC controller, seeTemp™ Wall Display(s), and Wireless Temperature sensor(s).

- Enter Add Mode:** Press and hold the “**Add**” button on Main Repeater for 3 seconds until green “**Add**” LED begins to rapid-flash (ten times per second) and repeater beeps. Wait 10 seconds.
- Add the devices to the Main Repeater:**
  - For the HVAC controller, press and hold the “**Link**” button for 3 seconds until all LEDs flash (once per second).
  - For the seeTemp™ Wall Display, press and hold the “**Eco**” button for 3 seconds until the top, middle and bottom LEDs flash (once per second).
  - For the Wireless Temperature Sensor, press and hold the “**Link**” button for 6 seconds until the LED flashes (once per second).
- Exit Add Mode:** Press and hold the “**Add**” button on any Repeater for 3 seconds until “**Add**” LED begins to rapid-flash. After LED turns off (can take up to 30–60 seconds), system has exited **Add Mode**.
- Enter Link Mode on the HVAC Controller:** Press and hold the “**Link**” button on HVAC Controller for 6 seconds until green “**Link**” LED begins to rapid-flash (ten times per second). Wait 10 seconds.
- Link the devices to the HVAC Controller:**
  - For the seeTemp™ Wall Display, press and hold the “**Eco**” button for 6 seconds until the top, middle and bottom LEDs rapid-flash.
  - For the Wireless Temperature Sensor, press and hold the “**Link**” button for 6 seconds until the LED flashes (once per second).
- Exit Link Mode on the HVAC Controller:** Press and hold the “**Link**” button on the HVAC Controller for 6 seconds until “**Link**” LED begins to rapid-flash. After LED turns off (can take from 15 to 30 seconds), HVAC Controller has exited **Link Mode**.
- Test the system:**
  - Set the seeTemp™ Wall Display to Heat or Cool mode.
  - Tap the “**Test**” button on the Wireless Temperature Sensor. The Temperature will update on the seeTemp™ Wall Display.
  - As the temperature changes, the HVAC controller will control the HVAC equipment when required.

**Testing the Wireless Temperature Sensor**

Before testing the Wireless Temperature Sensor, ensure the power to the receiving HVAC controller (LR-HVAC) is ON and the HVAC controller has been setup properly. If a seeTemp™ Wall Display (LRD-WST) is part of the system, ensure the power to the seeTemp™ Wall Display is ON and the seeTemp™ Wall Display has been linked to the receiving HVAC Controller. The seeTemp™ Wall Display will only function when programmed to a system with an HVAC controller. Setup PC software must be used by a Lutron® Factory-trained installer. For questions on how to become a qualified installer, please contact your local Lutron® representative.

- Press and hold the “Test” button on the Wireless Temperature Sensor for 6 seconds to enter Test Mode.**  
In **Test Mode**, the Wireless Temperature Sensor will send a transmission every 5 seconds. The LED will light for 1/2 second when a test transmission is being sent.
- Check the HVAC Controller & seeTemp™ Wall Display (if installed and programmed)**
  - The Active LED on the HVAC Controller should be lit solid and rapidly flash when it receives the Wireless Temperature Sensor Test transmission.
  - The seeTemp™ Wall Display should display the current Room Temperature.
- Press the “Test” button to exit Test Mode.**  
The Wireless Temperature Sensor will automatically exit Test Mode after 5 minutes.

**Troubleshooting Guide**

Symptom	Probable Cause and Action
Temperature feels too warm/cool.	HVAC equipment is malfunctioning or doesn't have enough power and can't reach setpoint. <ul style="list-style-type: none"> <li>Contact your HVAC installer.</li> </ul>
	Sensor is not placed near HVAC returns. <ul style="list-style-type: none"> <li>Move sensor.</li> </ul>
	Battery is dead. <ul style="list-style-type: none"> <li>Replace battery.</li> </ul>
HVAC controller not responding to temperature changes or seeTemp™ Wall Display.	The HVAC controller is not assigned to a Wireless Temperature Sensor or seeTemp™ Wall Display. <ul style="list-style-type: none"> <li>Follow the steps in <b>Programming by a Lutron® Factory Trained Installer</b>.</li> </ul>
	There is no power to the device. <ul style="list-style-type: none"> <li>Ensure that the device is powered.</li> </ul>
	Temperature may take up to 20 minutes to change in the space.
	HVAC equipment is malfunctioning or doesn't have enough power and can't reach setpoint. <ul style="list-style-type: none"> <li>Contact your HVAC installer.</li> </ul>
	The Wired Return Air Duct Sensor is not installed. <ul style="list-style-type: none"> <li>Install the Wired Return Air Duct Sensor.</li> </ul>
Sensor LED doesn't turn on when link or test buttons are pressed.	Battery is dead. <ul style="list-style-type: none"> <li>Replace battery.</li> </ul>
LEDs on a seeTemp™ Wall Display don't turn on when the buttons on it are pressed.	Power not present at seeTemp™ Wall Display. <ul style="list-style-type: none"> <li>Circuit breaker OFF. Turn ON breaker.</li> <li>Ensure that the seeTemp™ Wall Display is properly wired.</li> </ul>
6 LEDs on the seeTemp™ Wall Display flash when any button is pressed.	The seeTemp™ Wall Display is in the Factory Settings mode and has not been configured to work in a system. <ul style="list-style-type: none"> <li>Follow the steps in <b>Programming by a Lutron® Factory Trained Installer</b>.</li> </ul>
Room Temperature LED flashes rapidly.	Low battery on Wireless Temperature Sensor. <ul style="list-style-type: none"> <li>Replace battery in Wireless Temperature Sensor.</li> </ul>
Set temperature LED flashes rapidly.	The seeTemp™ Wall Display is communicating with the Wired Return Air Duct Sensor and cannot communicate with Wireless Temperature Sensor. <ul style="list-style-type: none"> <li>Move Wireless Temperature Sensor closer to a repeater.</li> </ul>
	The seeTemp™ Wall Display cannot communicate with one or more of the Wireless Temperature Sensors or the Wired Return Air Duct Sensor is not connected. <ul style="list-style-type: none"> <li>Move Wireless Temperature Sensor closer to a repeater.</li> <li>Make sure that the Wired Return Air Duct Sensor is connected.</li> </ul>
Room LED scrolls up and down.	No Wireless Temperature Sensor and no Wired Return Air Duct Sensor are present. <ul style="list-style-type: none"> <li>Replace battery in Wireless Temperature Sensor.</li> <li>Add a Wireless Temperature Sensor.</li> <li>Add a Wired Return Air Duct Sensor.</li> </ul>
Room and Set LEDs scroll up and down when button is pressed.	Communication error. <ul style="list-style-type: none"> <li>Move a repeater closer to a seeTemp™ Wall Display.</li> </ul>
Room or Set temperature top LED flashes slowly.	The room or set temperature is above maximum displayed temperature.
Room or Set temperature bottom LED flashes slowly.	The room or set temperature is below minimum displayed temperature.
LEDs on the HVAC Controller do not turn on when it is powered up.	Power not present. <ul style="list-style-type: none"> <li>Circuit breaker is OFF or tripped. Reset or turn on circuit breaker.</li> <li>Ensure that the HVAC Controller is properly wired.</li> </ul>
HVAC Controller's "Wireless Sensor Status" Active LED is flashing.	At least one Wireless Temperature Sensor is not communicating.

**Warranty:** For warranty information, please see the Warranty enclosed with the product, or visit [www.lutron.com/resiinfo](http://www.lutron.com/resiinfo)