



TRUE COMFORT ||||

This manual covers the following models:

- **T631W-2**
- Base Module

## Thermostat Applications Guide

Description	
Gas or Oil Heat	Yes
Electric Furnace	Yes
Heat Pump (No Aux. or Emergency Heat)	Yes
Heat Pump (with Aux. or Emergency Heat)	Yes
Multi-stage Systems	No
Heat Only Systems	Yes
Heat Only Systems - Floor or Wall Furnaces	Yes
Cool Only Systems	Yes
High and Low Fan Speed	Yes
Millivolt	No

## Power Type

Battery Power  
 Hardwire (Common Wire)  
 Hardwire (Common Wire) with Battery Backup

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Una versión española de este manual puede ser descargada en [www.pro1iaq.com](http://www.pro1iaq.com)

**A trained, experienced technician must install this product.**

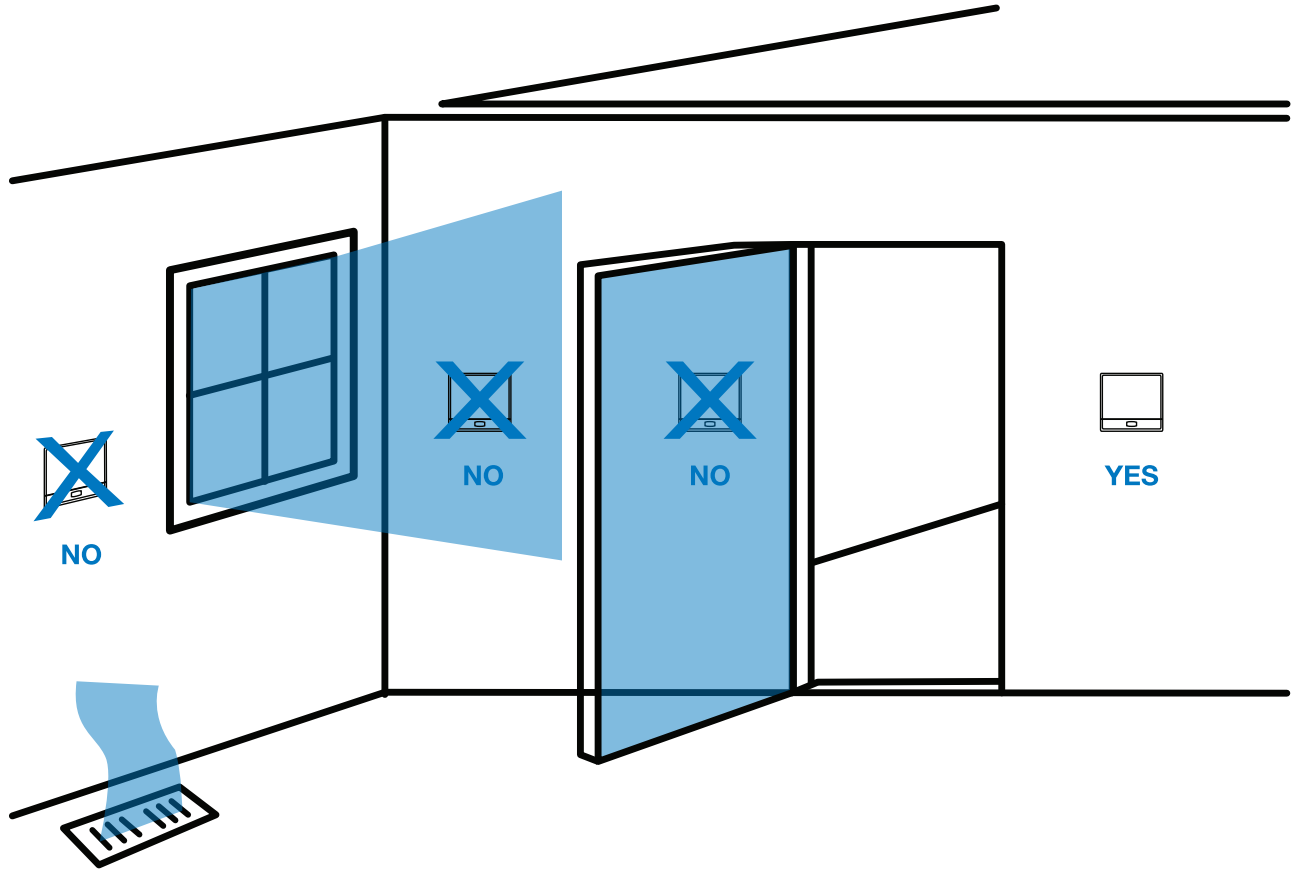
Carefully read these instructions. You could damage this product or cause a hazardous condition if you fail to follow these instructions.

## Need Help?

For assistance with this product please visit <http://www.pro1iaq.com> or call Pro1 Customer Care toll-free at 888-Pro1iaq (776-1427) during normal business hours (Mon-Fri 9 AM - 6 PM Eastern)

## Wall locations

The thermostat should be installed approximately 4 to 5 feet above the floor. Select an area with average temperature and good air circulation.



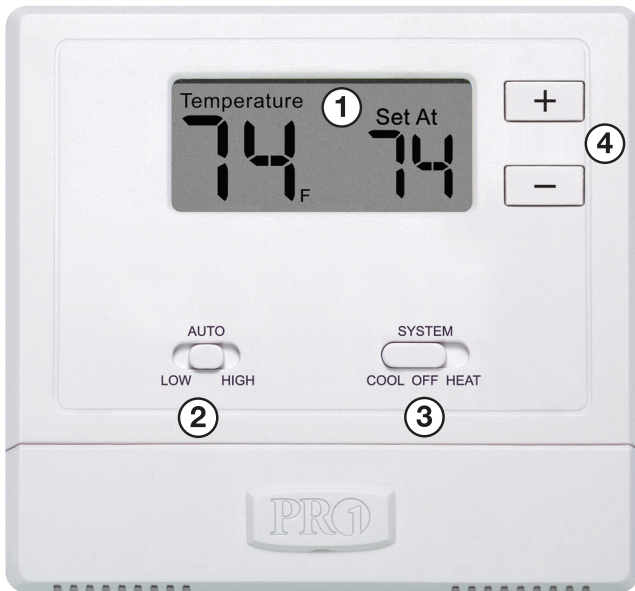
**Do not install** thermostat in locations:

- Close to hot or cold air ducts
- That are in direct sunlight
- With an outside wall behind the thermostat
- In areas that do not require conditioning
- Where there are dead spots or drafts (in corners or behind doors)
- Where there might be concealed chimneys or pipes

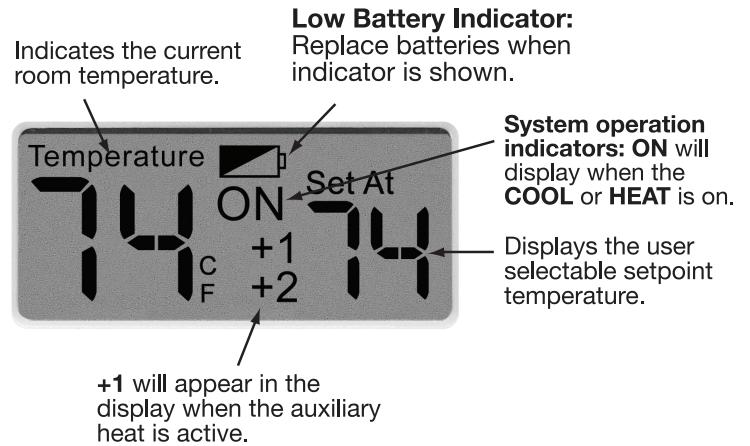
## PRO1 Tip

Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

## Getting to know your thermostat



### ① LCD



### ② Fan Switch

### ③ System Switch

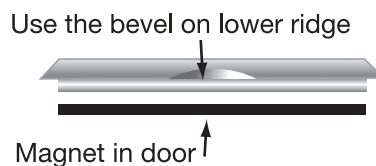
### ④ Set-point Buttons



### Important:

The low battery indicator is displayed when the AA battery power is low. If the user fails to replace the battery within 21 days, the thermostat display will only show the low battery indicator as a final warning before the thermostat becomes inoperable.

## Removing the private label badge



Gently slide a screwdriver into the bottom edge of the badge. Gently turn the screwdriver counter clockwise. The badge is held on by a magnet. The badge should pry off easily. **Do not use force.**

### PRO1 Tip

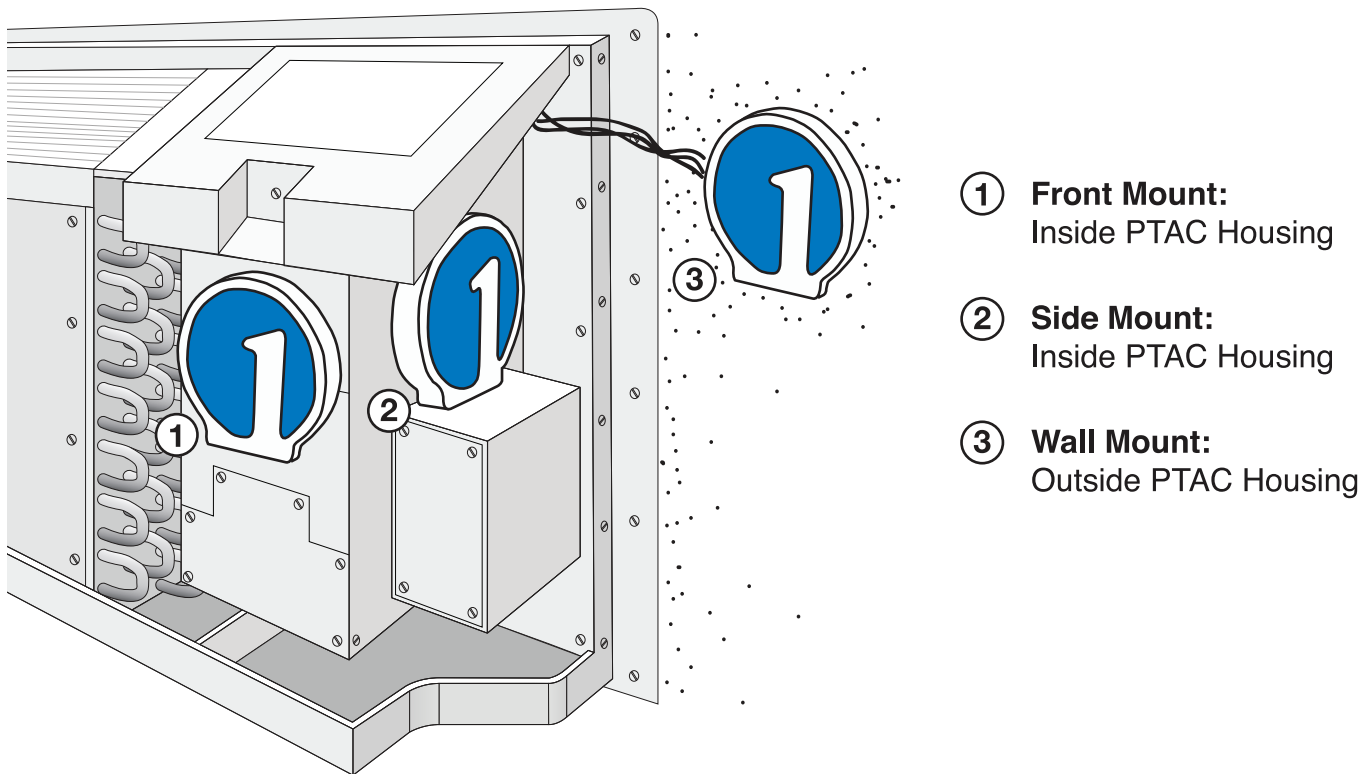
All Pro1 thermostats use the same universal magnetic badge. Visit our website at [www.pro1iaq.com](http://www.pro1iaq.com) to learn more about our free private label program.

## Base Module - PTAC Installation

### Wireless Range

Range between the T631W-2 and the basemodule is up to 100 feet with no obstructions and up to 50 feet in standard residential metal, brick, and concrete construction. To extend the range try placing the base unit higher if in a basement or further away from large metal objects.

The base module is designed to be mounted behind the front grille of a packaged terminal air conditioner (PTAC). Refer to the PTAC manufacturer's manual for instruction to remove the front grille. Check clearance to ensure fitment of front grille after base module installation and clear of moving parts. Ensure if mounting with screws that wires and lines are not damaged. See below for a few suggested options to mount the base module.



- ① **Front Mount:**  
Inside PTAC Housing
- ② **Side Mount:**  
Inside PTAC Housing
- ③ **Wall Mount:**  
Outside PTAC Housing

### PRO1 Tip

**Do not install** the base module in locations:

- That are behind a chimney
- Where temperature could exceed 150°F
- Where rain or snow or extreme hot or cold is possible

**NOTE:** The base module is NOT weatherproof.



### Caution: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

# THERMOSTAT SUB-BASE INSTALLATION



## Caution: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

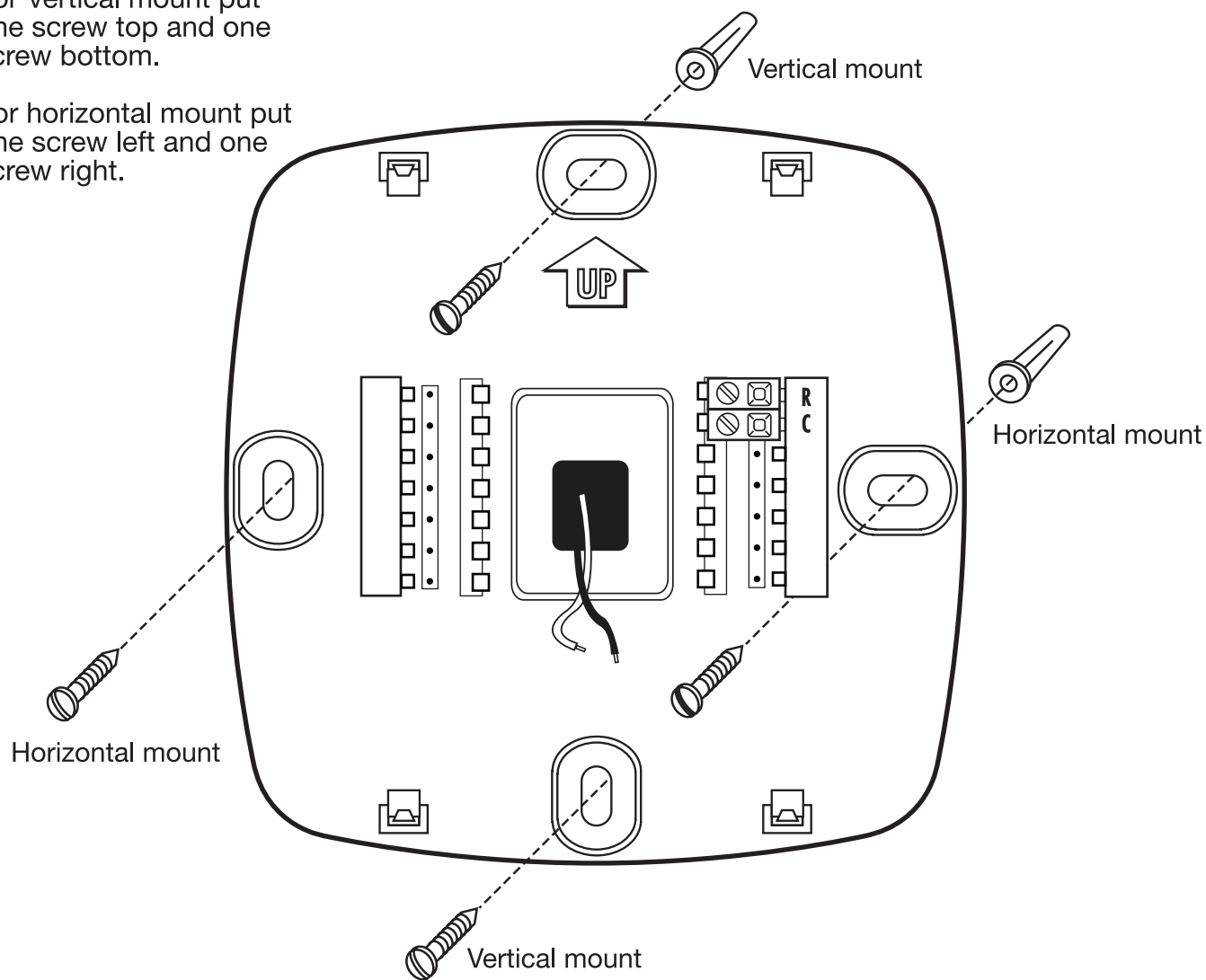


## Mercury Notice:

All of Pro1's products are mercury free. However, if the product you are replacing contains mercury, dispose of it properly. Your local waste management authority can give you instructions on recycling and proper disposal.

For vertical mount put one screw top and one screw bottom.

For horizontal mount put one screw left and one screw right.



## PRO1 Tip

It is recommended that the thermostat be hardwired, however, it is not required. Batteries should be checked annually if 24V power is not connected.

# BASE MODULE SUB-BASE INSTALLATION

## Wiring Note:

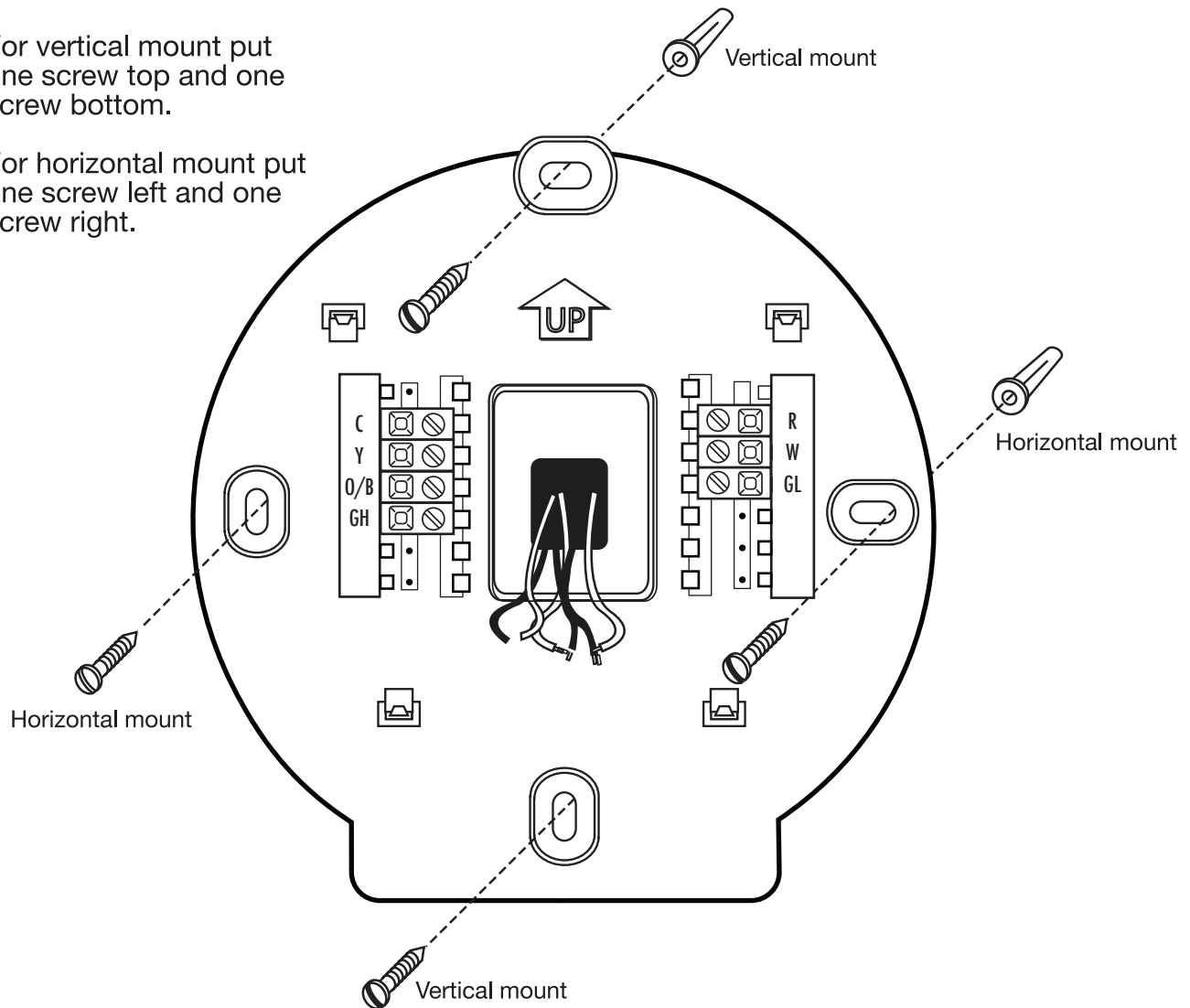
Wire the base module's subbase the same way you would wire a hardwired thermostat subbase.

## Note:

To connect the base module to master thermostat, refer to the directions on page 11 of this manual.

For vertical mount put one screw top and one screw bottom.

For horizontal mount put one screw left and one screw right.



## Note:

When mounting to a PTAC, ensure screws will not damage wires or coils.

The sub-base may be mounted using adhesive tape, such as double-sided tape or hook and loop stirps when drilling is not practical.

The base module must be hardwired (C and R terminals connected to 24V power).

Wiring

1.

If you are replacing a thermostat, make note of the terminal connections on the thermostat that is being replaced. In some cases the wiring connections will not be color coded. For example, the green wire may not be connected to the **G** terminal.
2.

Loosen the terminal block screws. Insert wires then retighten terminal block screws.



**Warning:**  
All components of the control system and the thermostat installation must conform to Class II circuits per the NEC Code.

**Wire specifications**  
Use shielded or non-shielded  
18 - 22 gauge thermostat wire.

Terminal Designations on Base Module

This thermostat is shipped from the factory to operate a conventional heating and cooling system. This thermostat will also operate a heat pump system. See the “heat pump” configuration step on page 12 of this manual to configure the thermostat for heat pump applications.

Terminal	1 Heat 1 Cool Conventional System	1 Heat 1 Cool Heat Pump System	2 Heat 1 Cool Heat Pump System
R	Transformer power	Transformer power	Transformer power
C	Transformer common	Transformer common	Transformer common
B	Energized in heating	Heat pump changeover valve energized in heating	Heat pump changeover valve energized in heating
O	Energized in cooling	Heat pump changeover valve energized in cooling	Heat pump changeover valve energized in cooling
GL	Fan relay, Low	Fan relay, Low	Fan relay, Low
GH	Fan relay, High	Fan relay, High	Fan relay, High
W	First stage of heat	NA	Second stage of heat
Y	First stage of cool	First stage of heat & cool	First stage of heat & cool

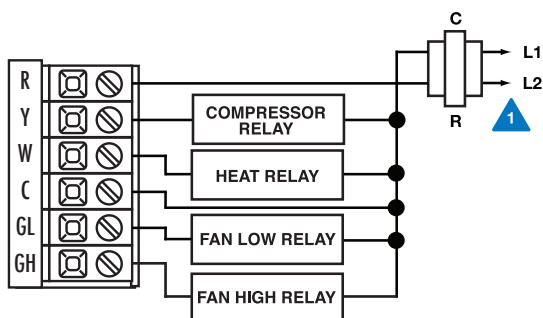
Terminal Designations on T955WH Master Thermostat

Terminal	1 Heat 1 Cool Conventional System	1 Heat 1 Cool Heat Pump System	2 Heat 1 Cool Heat Pump System
R	24 VAC Transformer power	24 VAC Transformer power	24 VAC Transformer power
C	Transformer common	Transformer common	Transformer common

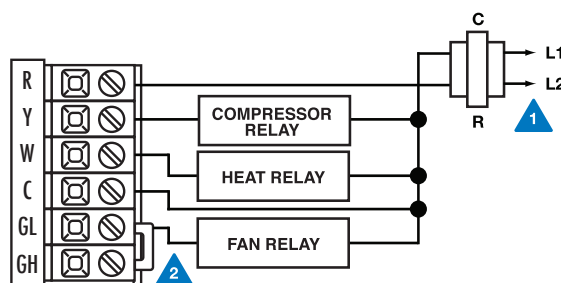
**Connecting to a PTAC:**  
When connecting the Base Module to a PTAC, refer to the PTAC manufacturer instructions to enable remote thermostat operation.

- 1 Power supply
- 2 Jumper (not supplied) to connect GL and GH terminals
- 3 The thermostat must be set to O or B to match the changeover valve, O is cool changeover valve, B is heat changeover valve.
- 4 The Aux Heat Relay is energized as the second stage of heat.

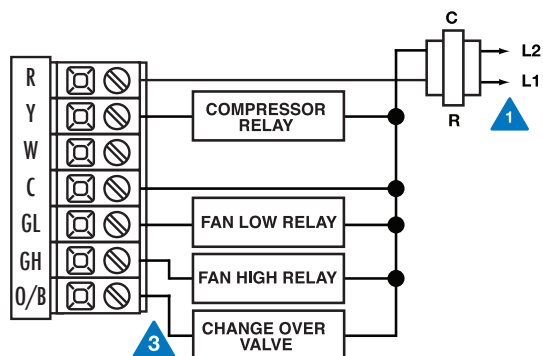
Typical 1H/1C system: 2 speed fan



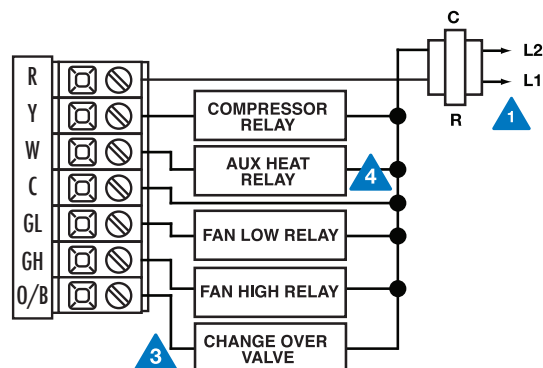
Typical 1H/1C system: 1 speed fan



Typical 1H/1C Heat Pump system: 2 speed fan

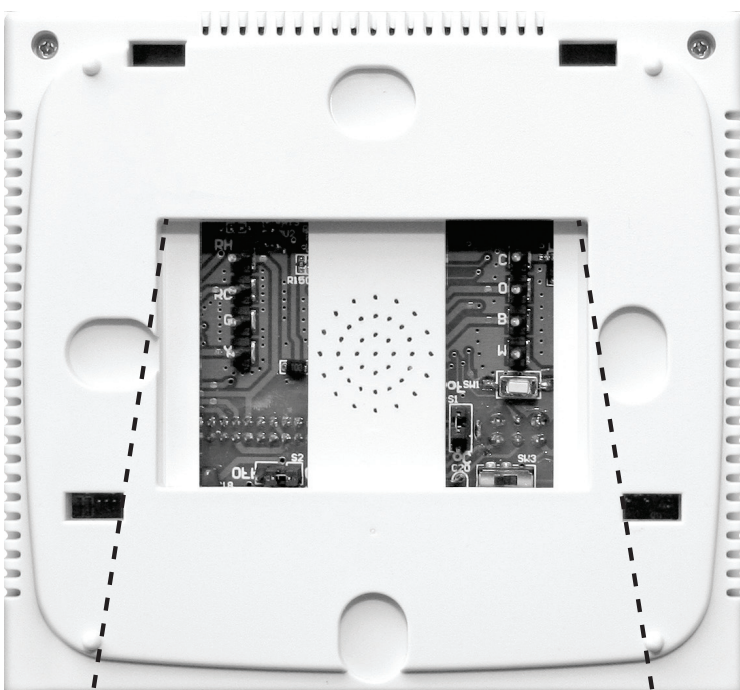


Typical 2H/1C Heat Pump system: 2 speed fan



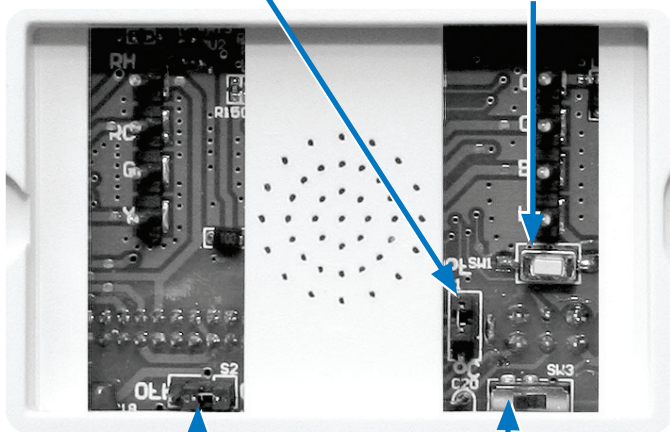
## Note:

Most PTAC systems support two speed fan operation. In a single speed fan system, a jumper (not supplied) should be installed between GL and GH.



Select **F** or **C**  
with the jumper pin

Reset button



Select delay **ON** or **OFF**  
with the jumper pin

Select **ELEC** or **GAS**  
with this switch



### Important:

The **RESET** button must be pressed after changing any switch or jumper pin setting. Batteries must be installed for this operation.

## Gas or Electric Setup

**Electric:** The thermostat operation switch should be put in the **ELEC** position. This setting allows the thermostat to operate the fan when the fan relay is connected to the **G** terminal. Most PTAC systems will require ELEC fan relay.

**Gas:** For systems that control the fan during a call for heat, put the fan operation switch to the **GAS** position.

## Fahrenheit/Celsius Display

Select **F** or **C** with the jumper pin on the back of the thermostat.



## Compressor Short Cycle Delay

The compressor short cycle delay protects the compressor from “short cycling”. This feature will not allow the compressor to be turned on for 5 minutes after it was last turned off.

Using the jumper on the back of the thermostat, selecting **ON** will not allow the compressor to be turned on for 5 minutes after the last time the compressor was on. Selecting **OFF** will remove this delay.



## Technician Setup Menu

This thermostat has 3 different setup configurations. To setup the thermostat for your particular application:

1. Set the thermostat system switch to **OFF**.
2. Press and hold  and  together for 3 seconds. This 3 second delay is designed so that users do not accidentally access installer settings.




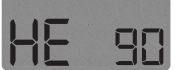
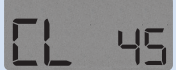



3. Configure the installer options as desired using the table below.

Use  and  to change settings.

Tap  and  together to move to the next step.

**NOTE:** When you want to exit Tech Setup options, move the system switch to **HEAT** or **COOL**.

### Tech Setup Options

Room Temperature Calibration	Change Over Valve Selection	Heat Pump	Heating Temperature Set-point Limit	Cooling Temperature Set-point Limit	Link Establish	Cooling Swing (SYSTEM COOL)	Heating Swing (SYSTEM HEAT)
This feature allows the installer to change the calibration of the room temperature display. For example, if the thermostat reads 70° and you would like it to read 72° then select +2.	Select <b>0</b> for a changeover valve that energizes in cooling. Select <b>b</b> for a change over valve that energizes in heating.	When turned on the thermostat will operate a heat pump.  Y will be first stage of heat & cool, W will be second stage heat.	This feature allows you to set a maximum heat set-point value. The set-point temperature cannot be raised above this value.	This feature allows you to set a minimum cool set-point value. The set-point temperature cannot be lowered below this value.	This step is used to connect T631W-2 to Base Module. Refer to page 11 for connection instructions.	The swing setting, often called "cycle rate", "differential" or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles.	The swing setting, often called "cycle rate", "differential" or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles.
LCD Will Show							
							
Adjustment Options							
You can adjust the room temperature display to ready -4°F to +4°F above or below the factory calibrated reading.	<b>0</b> for cooling changeover valve  <b>b</b> for heating changeover valve	OFF configures the thermostat for non heat pump systems.  ON configures the thermostat for heat pump systems.	45.0 °F - 90.0 °F	45.0 °F - 90.0 °F	NA	The cooling swing setting is adjustable from ±0.2°F to ±2°F. For Example: A swing setting of 0.5°F will turn the cooling on at approximately 0.5°F above the set-point and turn the cooling off at approximately 0.5°F below the set-point.	The heating swing setting is adjustable from ±0.2°F to ±2°F. For Example: A swing setting of 0.5°F will turn the heating on at approximately 0.5°F below the set-point and turn the heating off at approximately 0.5°F above the set-point.
Factory Default Settings							
0 °F	0	OFF	90 °F	45.0 °F	NA	0.8 °F	0.0 °F

## PRO1 Tip

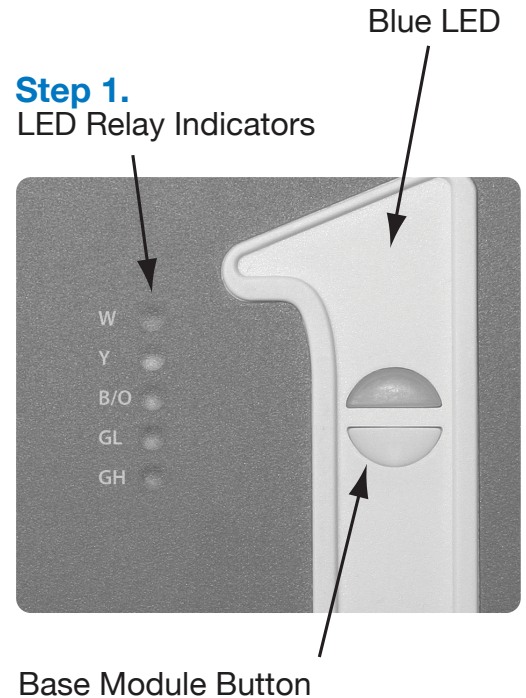
The second stage will turn on at 2x the swing setting. The second stage will turn off when 1x the swing is reached. For example, if the swing setting is 0.8° for heating and the thermostat is set at 70°F, the first stage will turn on at approximately 69.2°F. The second stage will turn on at 68.4°F. The second stage will turn off at 69.2°F and the first will turn off at 70.8°F.

## Establishing Communication between T631W-2 and the Base Module

### Easy, Two Step Communication Link

To set up the initial link between the Thermostat and the base module please follow the steps below:

1. Press and hold the **base module** button for 3 seconds. The **Blue LED** will flash when ready to receive initial signal from **T631W-2**. (Base module must be powered by 24V. **Blue LED** will be continuously on when 24V power is present.)
2. Set the thermostat system switch to OFF. Press and hold **-** and **+** for 3 seconds. Tap **-** and **+** together until LE is displayed. Press and hold **+** until LE flashes 3 times, the Blue LED on the base module will stop flashing after communication has been established between base module and T631W-2.



#### Note:

The **Blue LED** on the **base module** will be on when power is present. The **Blue LED** will flash 3 times every time it receives a signal from **T631W-2**. When a relay is on the corresponding LED relay indicator will be on.

#### Note:

If the base module does not receive a signal from the **T631W-2** for 15 minutes it will turn off all relays until communication is reestablished. The **Blue LED** on the base module will also turn off to show communication has been lost.

### Step 2.



#### Important:

**DO NOT** hold the **+** button when **LE** is displayed after **Step 2**, above has been completed. This will break the communication link and the base module button will need to be pressed again to reestablish communication.

# INSTALLATION MANUAL

## MOUNT THERMOSTAT & BATTERY INSTALLATION

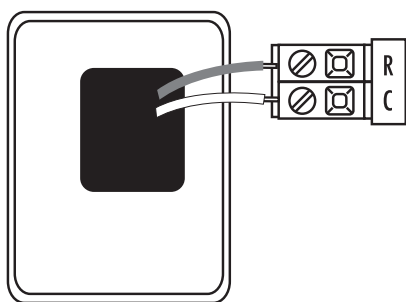
### Mount Thermostat

Align the 4 tabs on the sub-base with corresponding slots on the back of the thermostat, then push gently until the thermostat snaps in place.



### Battery Installation

Battery installation is optional if thermostat is hardwired (R and C terminal connected to 24v power).



Insert 2 AA Alkaline batteries (included).

### Specifications

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#### T631W-2 Thermostat

The display range of temperature .....	41°F to 95°F (5°C to 35°C)
The control range of temperature .....	44°F to 90°F (7°C to 32°C)
Load rating .....	1 amp per terminal, 1.5 amp maximum all terminals combined
Display accuracy .....	± 1°F
Swing (cycle rate or differential) .....	Heating is adjustable from 0.2°F to 2.0°F Cooling is adjustable from 0.2°F to 2.0°F
Power source .....	18 to 30 VAC, NEC Class II, 50/60 Hz for hardwire (common wire) Battery power from 2 AA Alkaline batteries
Operating ambient .....	32°F to +105°F (0° to +41°C)
Operating humidity .....	90% non-condensing maximum
Dimensions of thermostat .....	4.7"W x 4.4"H x 1.1"D
Frequency .....	916 MHz

#### Base Module

Load rating .....	1 amp per terminal, 1.5 amp maximum all terminals combined
Power source .....	18 to 30 VAC, NEC Class II, 50/60 Hz
Operating ambient .....	32°F to +150°F (0° to +65°C)
Operating humidity .....	90% non-condensing maximum

### Contact Us

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