T621-2

Pro1 Technologies
P.O. Box 3377
Springfield, MO 65808-3377
Toll Free : 888-776-1427
Web: www.pro1iaq.com
Hours of Operation: M-F 9AM - 6PM Eastern

Thermostat Application Guide

Description	
Gas or Oil Heat	No
Electric Furnace	No
Heat Pump (No Aux. or Emergency Heat)	Yes
Heat Pump (With Aux. or Emergency Heat)	Yes
Multi-Stage Systems	No
Heat Only Systems	No
Heat Only Systems - Floor or Wall Furnace	No
Cool Only Systems	No
Millivolt	No

Power Type

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

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.

Una version en español de este manual se puede descargar en la pagina web de la compañia.

Table of Contents

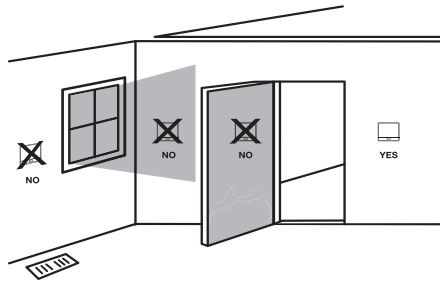
	Page
Specifications	1
Installation Tips	2-3
Thermostat Quick Reference	4
Wiring	5
Wiring Diagrams	6
Technician Setup	7-8

Specifications

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)
Swing (cycle rate or differential) ..... Heating is adjustable from 0.2˚ to 2.0˚
Cooling is adjustable from 0.2˚ to 2.0˚
Power source .....18 to 30 VAC, NEC Class II, 50/60 Hz for hardwire
Battery power from 2 AA Alkaline batteries
Operating ambient ..... 32˚F to +105˚F (0˚C to +41˚C)
Operating humidity ..... 90% non-condensing maximum
Dimensions of thermostat ..... 4.7”W x 4.4”H x 1.1”D

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.



Installation Tip

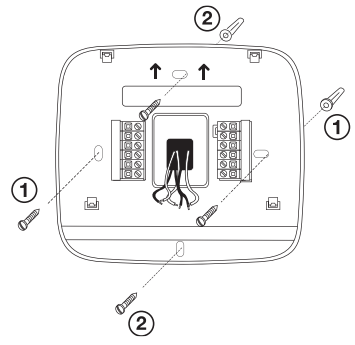
Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

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

Subbase Installation

① Horizontal Mount
② Vertical Mount



For vertical mount put one screw on the top and one screw on the bottom.
For horizontal mount put one screw on the left and one screw on the right.

Installation Tip: Electrical Hazard

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

Mercury Notice

All of our 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.

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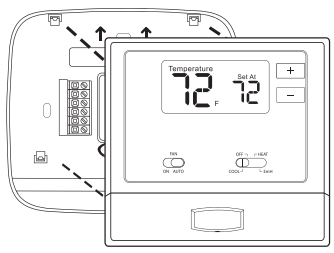
Rev. 1809

Mount Thermostat

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



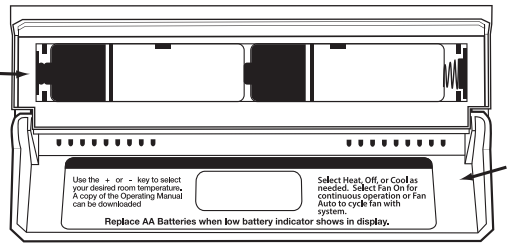
Battery Installation

Battery installation is recommended even if thermostat is hardwired (C terminal connected). When thermostat is hardwired and batteries are installed, the thermostat will activate a compressor delay of 5 minutes when the thermostat detects a power outage from the hardwired power supply.

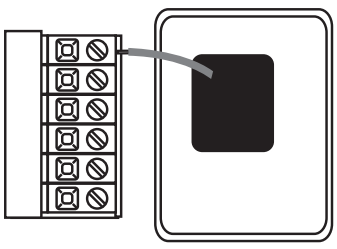
Important:

High quality alkaline batteries are recommended. Rechargeable batteries or low quality batteries do not guarantee a 1-year life span.

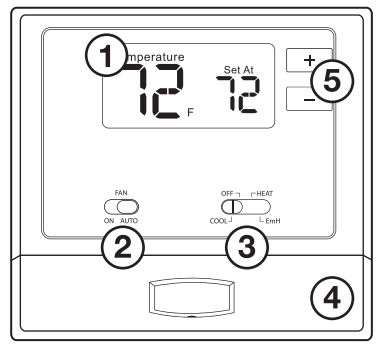
Insert 2 AA Alkaline batteries (included). High quality alkaline batteries are recommended.

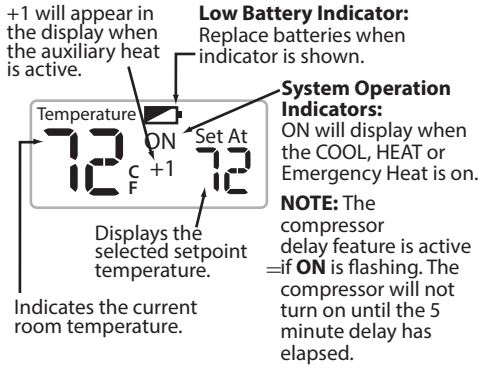


Simple operating instructions are found on the back of the battery door.



Getting to know your thermostat



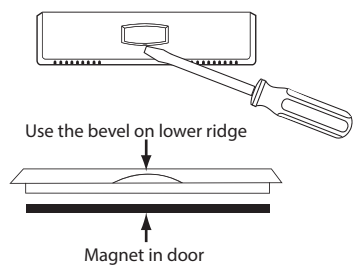


① LCD
② Fan switch
③ System switch
④ Easy change battery door
⑤ Temperature setpoint buttons

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 screen will only show the low battery indicator but maintain all functionality. If the user fails to replace the batteries after an additional 21 days (days 22-42 since first “low battery” display) the setpoints will change to 55˚F (Heating) and 85˚F (Cooling). If the user adjusts the setpoint away from either of these, it will hold for 4 hours then return to either 55˚F or 85˚F. After day 63 the batteries must be replaced immediately to avoid freezing or overheating because the thermostat will shut the unit off until the batteries are changed.

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 in the well of the battery door. The badge should pry off easily. **DO NOT USE FORCE.**

About The Badge

All of our thermostats use the same universal magnetic badge. Visit the company website to learn more about our free private label program.

Caution: Electrical Hazard

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

Warning:

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

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.
3. Place nonflammable insulation into wall opening to prevent drafts.

Installation Tip

Do not overtighten terminal block screws, as this can damage the terminal block. A damaged terminal block can keep the thermostat from fitting on the subbase correctly or cause system operation issues.

Max Torque = 6in-lbs.

Terminal Designations

- **C** Common wire from system transformer
- **O** Heat pump changeover valve energized in cooling
- **B** Heat pump changeover valve energized in heating
- **E** Emergency heat relay
- **W2** Auxiliary heat relay -Stage 2 heat
- **R** Transformer power
- **G** Fan relay
- **Y** Compressor relay - Stage 1 heat and cool

Wiring Tips

Wire Specifications

Use shielded or non-shielded 18-22 gauge thermostat wire.

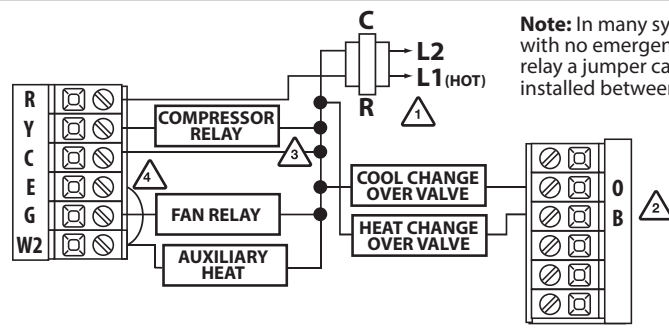
C Terminal

The C (common wire) terminal does not have to be connected when the thermostat is powered by batteries.

1. **Power supply**
2. **Use either O or B terminals for changeover valve.**
3. **Optional 24 VAC common connection when thermostat is used in battery power mode.**
4. **Field-supplied jumper**

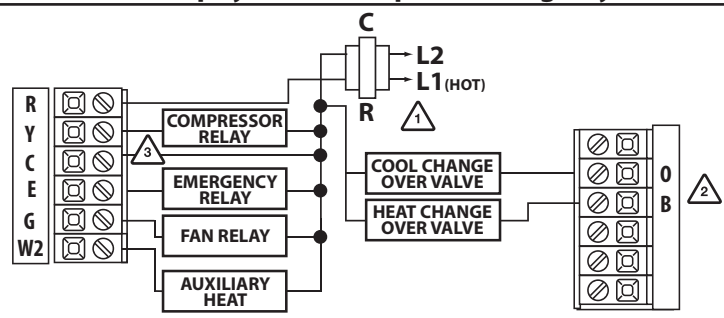
NOTE: In many systems with no emergency heat relay a jumper can be installed between E and W2.

2H/1C Heat Pump System



Note: In many systems with no emergency heat relay a jumper can be installed between E and W2.

Typical 2H/1C Heat Pump System with seperate emergency heat



Tech Settings

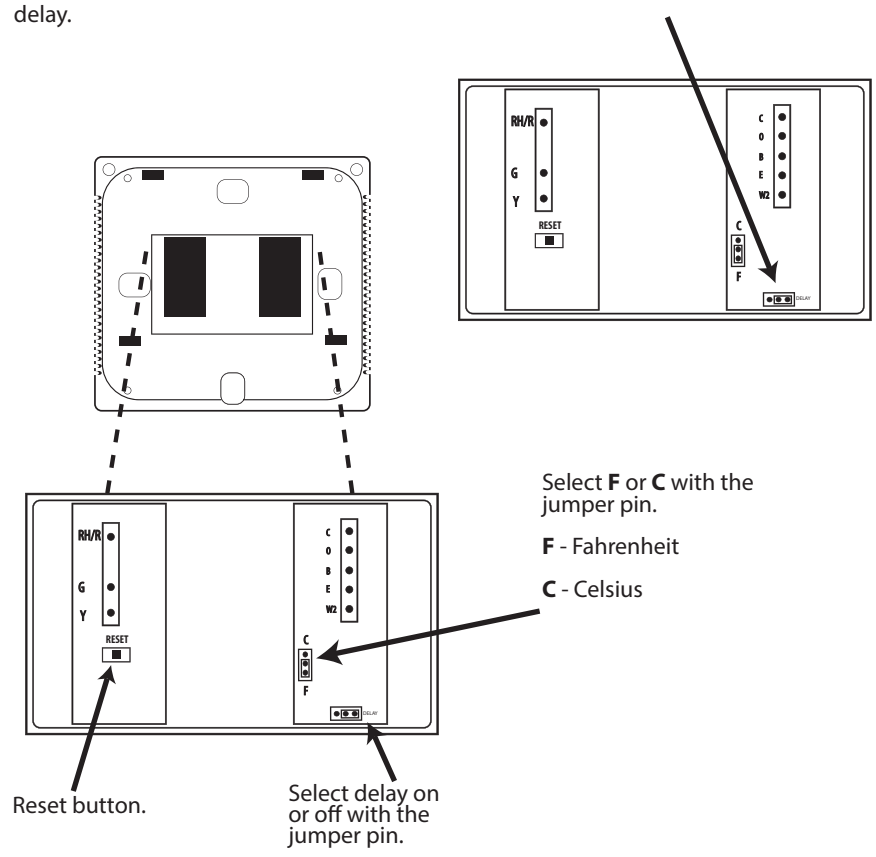
This thermostat has 4 different setup configurations. To setup the thermostat for your particular application:

1. Select COOL, HEAT, EmH, or OFF with the system switch.
2. Press and hold the + and - buttons together for 3 seconds. This 3 second delay is deigned so that homeowners do not accidentally access the installer settings.
3. Use the + and - to change settings. **Note:** When you want to exit the Technician Setup options select OFF using the system switch.

Tech Settings		LCD Will Show	Adjustment Options	Default
Room Temperature Calibration (Select System OFF)	This feature allows the installer to change the calibration of the room temperature display. For example, if the thermostat reads 70 degrees and you would like it to read 72 then select +2.	CA 0	You can adjust the room temperature display to read 4˚above or below the factory calibrated reading.	0
Cooling Swing (Selecting System COOL)	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.	08	The cooling swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the cooling on at approximately 0.5˚ above the setpoint and turn the cooling off at approximately 0.5˚ below the setpoint.	0.8
Heating Swing (Selecting System HEAT)	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.	08	The heating swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the heating on at approximately 0.5˚ below the setpoint and turn the heating off at approximately 0.5˚ above the setpoint.	0.8
Gas Auxiliary for Heat Pump (Selecting System EMH)	When **ON**, this feature turns off the Y terminal 45 seconds after the second stage of heat (W2) turns on. When **OFF**, it allows 1st stage (Y) and 2nd stage (W2) to run together. (Electric for Aux)	OF 6A	Selectable **ON** or **OFF**. This option should be **ON** for DUAL FUEL applications that use a gas furnace for auxiliary heat.	OFF

Swing Setting Tip

Temperature swing, sometimes called differential or cycle rate, can be customized for this individual application. For most applications choose a swing setting that is as wide as possible without making the occupants uncomfortable.

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. Default setting is **ON**. Selecting **OFF** with the jumper pin will remove this delay.