



# T801

**Pro1 Technologies**

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**Thermostat Application 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)	No
Multi-Stage Systems	No
Heat Only Systems	Yes
Cool Only Systems	Yes
Millivolt	Yes

**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 compañía.

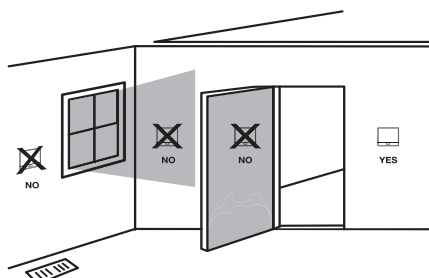
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**Wall Locations**

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**

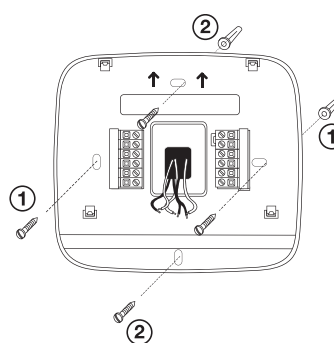
Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

**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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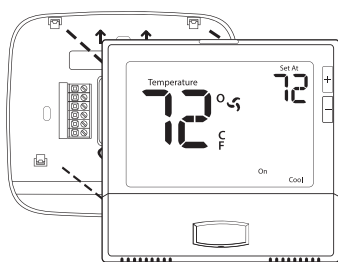
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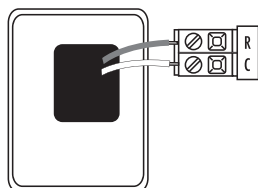
**Installation Tips**

**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**

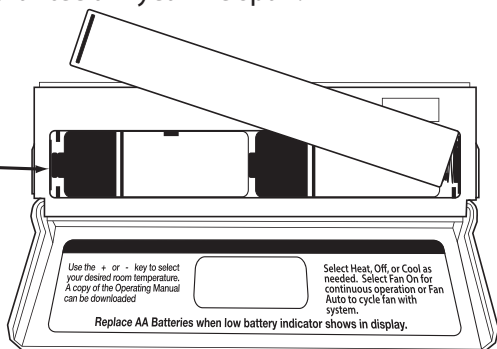


Battery installation is optional if thermostat is hardwired (R and C terminal connected to 24V power).

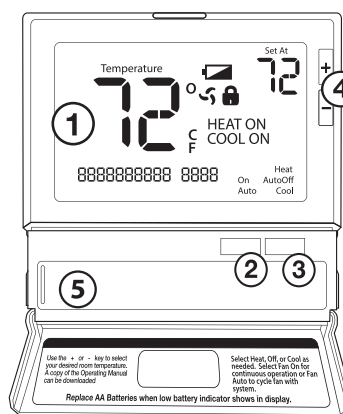
**Important:**

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.

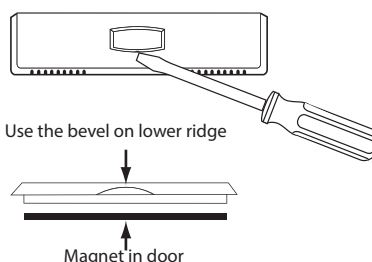


**Getting to know your thermostat**



- ① LCD
- ② Fan Button
- ③ System Button
- ④ Setpoint Buttons
- ⑤ Battery Cover

**Removing The Private Label Badge**



**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.

**Thermostat Quick Reference**

**Low Battery Indicator:** Replaces batteries when indicator is shown.

**Keypad Lockout Indicator:** Displays the user selectable setpoint temperature.

**Temperature:** Displays the current room temperature.

**Set At:** These system operation indicators will display when COOL, HEAT or FAN is ON.

**HEAT ON / COOL ON / FAN ON:** NOTE: The compressor delay feature is active if these icons are flashing. The compressor will not turn on until the 5 minute delay has elapsed.

**Fan and System Options:** Indicates the current room temperature.

**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.

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.**

# Wiring

## 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.

## Terminal Designations

- C** Common wire from secondary side of transformer
- O** Heat pump changeover valve energized in cooling
- B** Heat pump changeover valve energized in heating
- W** Heat relay
- RH** Transformer power for heating
- RC** Transformer power for cooling
- G** Fan relay
- Y** Compressor relay

## Wiring Tips

### RH & RC Terminals

For single transformer systems, leave the jumper wire in place between RH and RC. Remove jumper wire for two transformer systems.

### Heat Pump Systems (With NO AUX or Emergency Heat)

If wiring to a heat pump, use a small piece of wire (not supplied) to connect terminals W and Y.

### C Terminal

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

### Wire Specifications

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

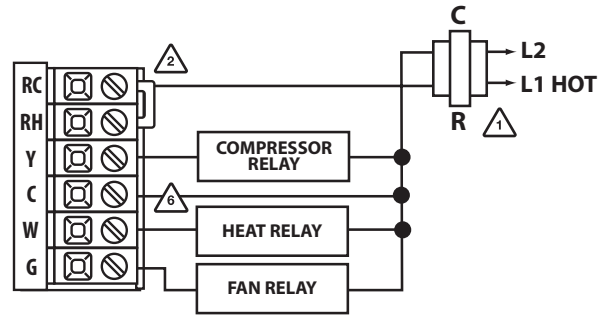


**Installation Tip:** Do not overtighten terminal block screws, as this can damage the terminal block. A damaged terminal block can keep the thermostat from fitting on the subbase correctly or cause system operation issues. **Max Torque = 6in-lbs.**

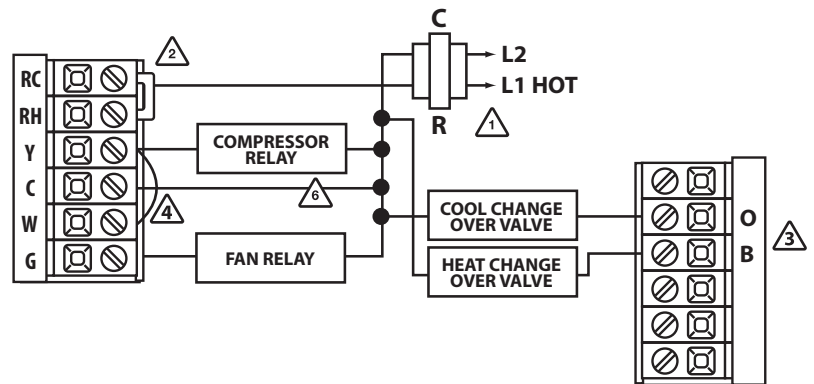
# Wiring Diagrams

- 1 Power supply
- 2 Factory-installed jumper. Remove only when installing on 2-transformer systems.
- 3 Use either O or B terminals for changeover valve.
- 4 Use a small piece of wire (not supplied) to connect W and Y terminals.
- 5 Set fan operation switch to electric.
- 6 Optional 24 VAC common connection when thermostat is used in battery power mode.

## Typical 1H/1C System: 1 Transformer



## Typical 1H/1C Heat Pump System



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## Technician Setup

1. To enter Tech Setup Menu, press and hold **-** and **+** together for 3 seconds.
2. Use **-** or **+** to select desired setting for each option.
3. Use the System and Fan buttons to move through the steps.
4. To exit Tech Setup press and hold **-** and **+** together for 3 seconds.

Tech Setup Steps	LCD Will Show	Adjustment Options	Default
Filter Change Reminder	SE FI OFF	You can adjust the filter change reminder from OFF to 2000 hours of runtime in 50 hour increments.	OFF
Room Temperature Calibration	0 CARL	You can adjust the room temperature display to read 4° above or below the factory calibrated reading.	0
Minimum Compressor On Time	01 AN OFF	You can select the minimum compressor run time from "off", "3", "4", or "5" minutes. If 3, 4, or 5 is selected, the compressor will run for at least the selected time before turning off.	OFF
Compressor Short Cycle Delay	05 CO ON	Selecting "ON" will not allow the compressor to be turned on for 5 minutes after the last time the compressor was switched off. Select "OFF" to remove this delay.	ON
Cooling Swing	0.5 COOL SWING	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.	0.5

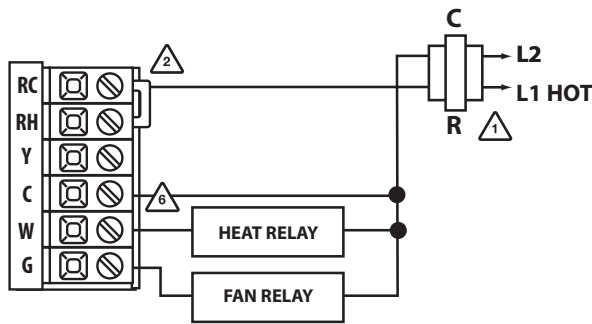
## Technician Setup

Tech Setup Steps	LCD Will Show	Adjustment Options	Default
Heating Swing	0.4 HEAT SWING	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.	0.4
Keypad Lockout	0F KEY LOCK	Keypad lockout allows you to configure the thermostat so that none or some of the keys do not function. Select OF, PA or FU. OF = (off) Keypad Lockout will be disabled. PA= Partial keypad lockout, locks all the keys except the <b>-</b> or <b>+</b> keys. FU= Full Keypad lockout, locks out all the keys. <b>Note:</b> Keypad lockout instructions are at the end of tech setup.	OFF
Heating Temperature Setpoint Limit	90 HE HEAT LIMIT	This feature allows you to set a maximum heat setpoint value. The setpoint temperature cannot be raised above this value. Use the <b>-</b> or <b>+</b> key to select the maximum heat setpoint. Range 44°F - 90°F	90°
Cooling Temperature Setpoint Limit	44 CO COOL LIMIT	This feature allows you to set a minimum cool setpoint value. The setpoint temperature cannot be lowered below this value. Use the <b>-</b> or <b>+</b> key to select the minimum cool setpoint. Range 44°F - 90°F	44°
F° or C°	F 74	Select F for Fahrenheit read out or select C for Celsius read out.	F°
Fan Operation	ELEC	Select GAS for systems that control the fan during a call for heat. Select ELEC to have the thermostat control the fan during a call for heat.	GAS

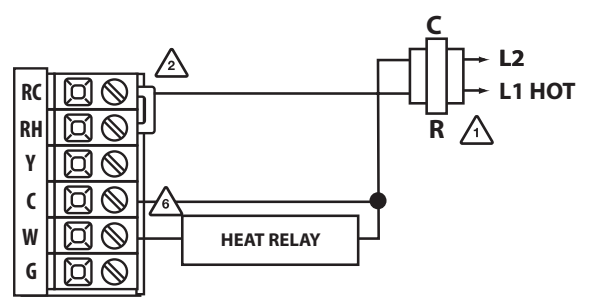
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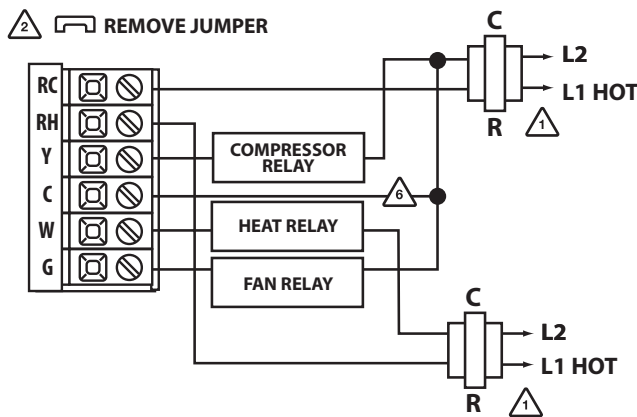
Typical Heat-Only System With Fan



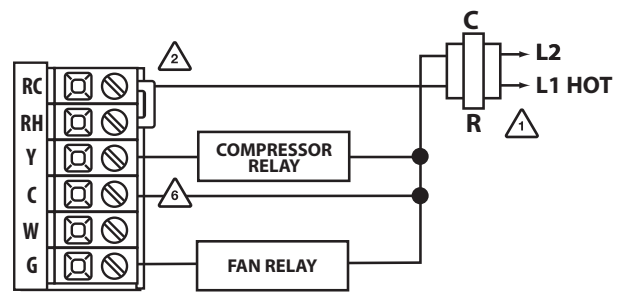
Typical Heat-Only System



Typical 1H/1C System: 2 Transformer



Typical Cool-Only System



Technician Setup

Tech Setup Steps	LCD Will Show	Adjustment Options	Default
Display Light The display light can be configured to come on when any key is pressed or only when the light key is pressed.	OFF	OFF configures display light to come on only with the light key, which will save battery power. ON configures the display light to come on when any key is pressed.	ON
Contractor Call Number Allows you to put your phone number in the display. Selecting "ON" will enable this feature. "OFF" will disable this feature.	OFF CALL	If selected on, you will see the input screen after pressing SYSTEM key. Use the [←] key to move from one character to another. Use the [→] key to change the blinking character. Press SYSTEM key when finished.	OFF
Beep When any key is pressed an audible beep will sound. There is an ON or an OFF.	ON	If ON is selected the beep will sound. If OFF is selected, there is no sound.	ON
System Switch You can configure the system switch for the particular application: Heat - Off - Cool, Heat - Off, Cool - Off, Heat - Off - Cool-Auto Auto - Autochangeover	HEAT OFF COOL	Use the [←] or [→] key until the desired application is flashing.	HEAT OFF COOL
Humidity Pad Reminder This will remind the user to change the humidity pad.	OFF HUM PAD OFF	Use the [←] or [→] key to select OFF, 600, 1000, 1500, 2000. These represent hours of heat operation.	OFF
UV Lamp Reminder Will remind the user to change the UV light bulb.	OFF UV LAMP OFF	Use the [←] or [→] key to select OFF 1 YEAR, 2 YEAR.	OFF
IAQ Cell Reminder Will remind the user to change the PHI Cell after 25,000 hrs.	OFF IAQ CELL	Use the [←] or [→] key to select OFF, or 250. (Stands for 25000 hours).	OFF

Technician Setup & Specifications

Reminder Note

Once a reminder has been turned on and set, the elapsed time can be checked by navigating to its Technician Setup step with a press of the **SYSTEM BUTTON**, the elapsed time will be displayed. It can also be reset at the time by a press and hold of the **FAN BUTTON** for 3 seconds. Resetting an expired reminder can be done without entering tech setup, by a press and hold of the **FAN BUTTON** for 3 seconds.

A Note About Keypad Lockout:

The function of activating your lockout choice takes place after you have exited tech setup to lock or unlock the keypad hold down the **FAN** and **SYSTEM** for 3 seconds.

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)
- Load rating..... 1 amp per terminal, 1.5 amp maximum all terminals combined
- 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"D