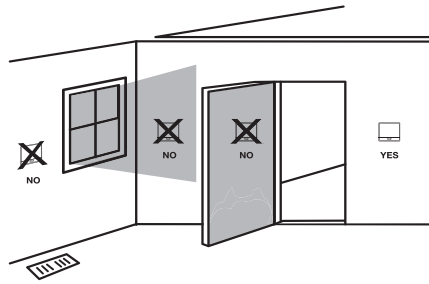


Wall Locations

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

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.

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)	Yes
Multi-Stage Systems	Yes
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.

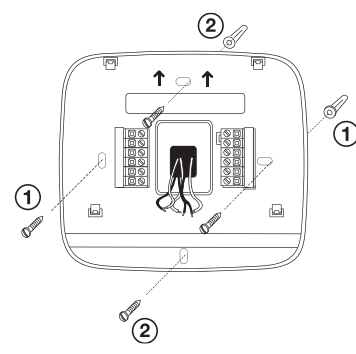
Una version en español de este manual se puede descargar en la pagina web de la compañía.

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Thermostat Quick Reference	4-5
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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.

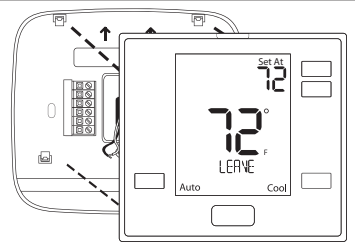
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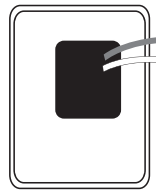
Installation Tips **Thermostat Quick Reference**

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.



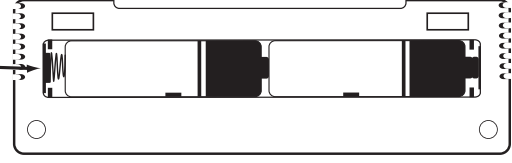
Battery Installation



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

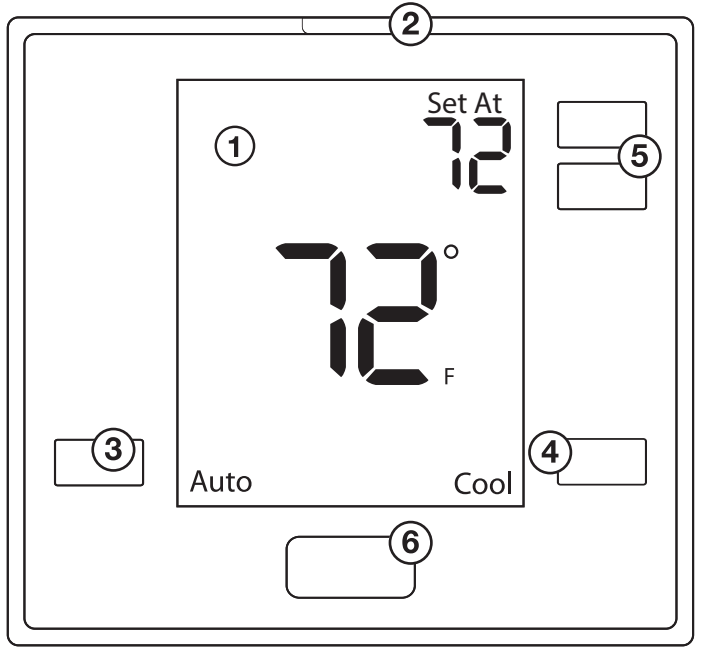
Important:
High quality alkaline batteries are recommended. Rechargeable batteries or low quality batteries do not guarantee a 1-year life span.

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



Located on the back of the thermostat.

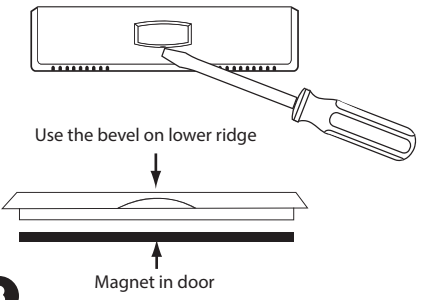
Getting to know your thermostat



- ① LCD Display
- ② Glow in the dark light button
- ③ Fan Button
- ④ System Button
- ⑤ Temperature Setpoint Buttons
- ⑥ Private Label Badge

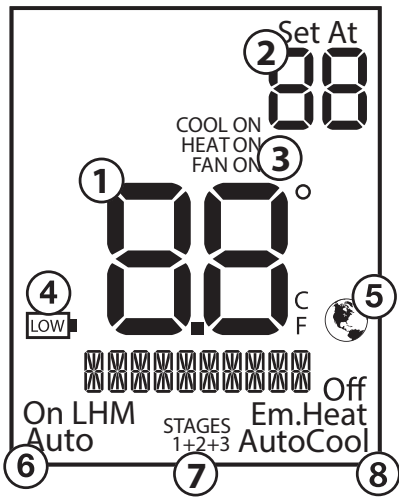
About The Private Label Badge

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



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.**

Getting to know your thermostat



- 1** Indicates the current room temperature
- 2** **Setpoint:** Displays the selected setpoint temperature.
- 3** **System Operation Indicators:** The COOL ON, HEAT ON or FAN ON will display when the COOL, HEAT, or FAN is on. **The compressor delay feature is active if these are flashing.**
- 4** **Low Battery Indicator:** Replace batteries when this indicator is shown.
- 5** **Globe:** Globe is displayed if an energy efficient temperature has been selected.
- 6** **Fan:** Indicates the current fan setting.
- 7** **Stages:** +1 will appear in the display when the first stage of heat or cool is on. +2 will appear for the second stage of heat.
- 8** **System:** Indicates current system mode setting.

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.

Wiring

- 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.
- Loosen the terminal block screws. Insert wires then retighten terminal block screws.
- Place nonflammable insulation into wall opening to prevent drafts.

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.

Terminal	2 Heat 2 Cool Conventional System	2 Heat 1 Cool Heat Pump System	3 Heat 2 Cool Heat Pump System
RC	Transformer power (cooling)	Transformer power (cooling)	Transformer power (cooling)
RH	Transformer power (heating)	Transformer power (heating)	Transformer power (heating)
C	Transformer common	Transformer common	Transformer common
B	Reverse Valve / Configurable Terminal	Reverse Valve / Configurable Terminal	Reverse Valve / Configurable Terminal
O	Reverse Valve / Configurable Terminal	Reverse Valve / Configurable Terminal	Reverse Valve / Configurable Terminal
G	Fan relay	Fan relay	Fan relay
W/E	First stage of heat	First stage of emergency heat	First stage of emergency heat
W2	Second stage of heat	Auxiliary heat relay, second stage of heat	Auxiliary heat relay, third/fourth stage of heat
Y	First stage of cool	First stage of heat & cool	First stage of heat & cool
Y2	Second stage of cool	N/A	Second stage of cool & second stage of heat

Wiring Diagrams

Wiring Tips

C Terminal

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

Wire Specifications

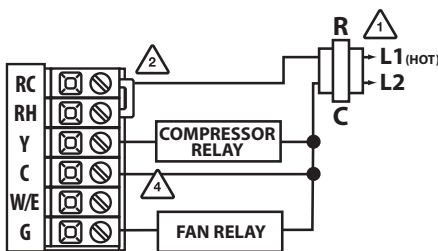
Use shielded or non-shielded 18-22 gauge thermostat wire.



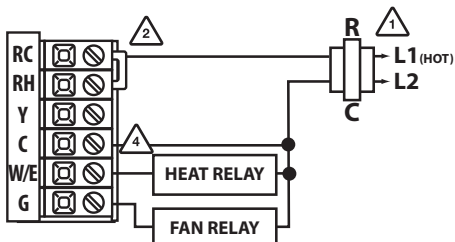
Installation Tip: Do not overtighten terminal block screws, as this can damage the terminal block. A damaged terminal block can keep the thermostat from fitting on the subbase correctly or cause system operation issues. **Max Torque = 6in-lbs.**

- Power supply
- Factory - installed jumper. Remove only when installing on a 2 transformer systems.
- Use either O or B terminals for changeover valve.
- Optional 24 VAC common connection when thermostat is used in battery power mode.

Typical Cool-Only System With Fan



Typical Heat Only System With Fan



Wiring Diagrams

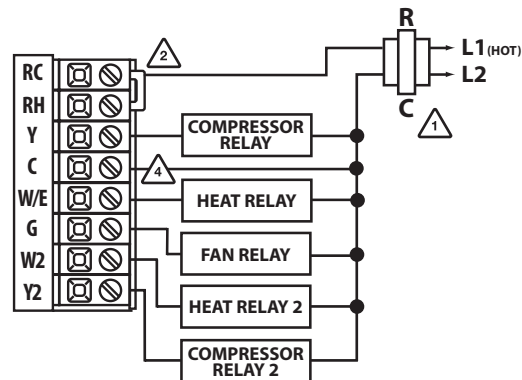


Note: This thermostat is hardwire powered when the 24V transformer is connected to the Common and **RC terminals** of the thermostat.

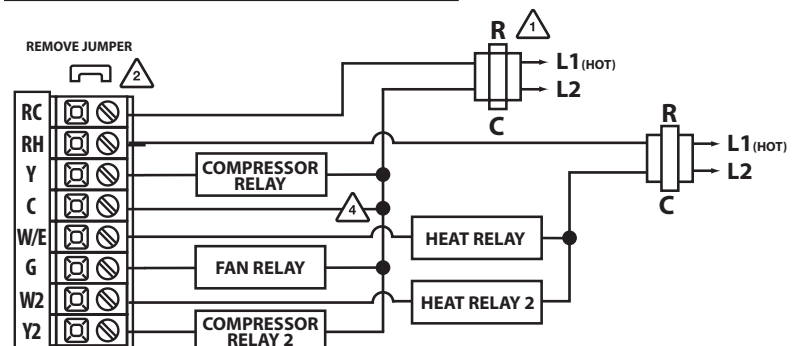


Note: In many systems with no emergency heat relay a jumper can be used between E and W2.

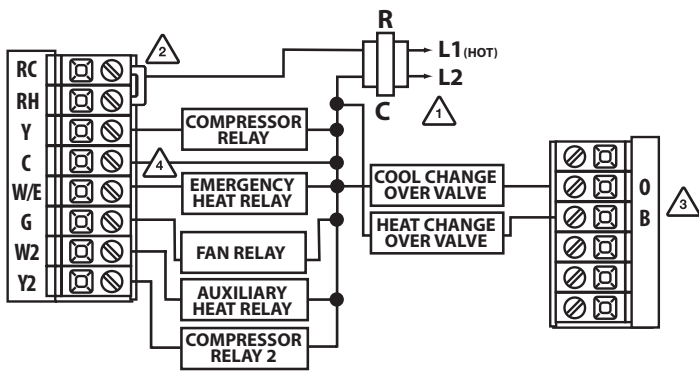
Typical 2H/2C System: 1 Transformer



Typical 2H/2C System: 2 Transformer



Typical 3H/2C or 2H/1C Heat Pump System



Note:

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

Technician Setup Menu

This thermostat has a technician setup menu for easy installer configuration. To set up the thermostat for your particular application:

1. Hold down the + and - buttons together for 3 seconds.
2. Use the + and - buttons to modify a setting. Use the Fan button to go back a step and use the system button to go forward a step.
3. To exit Tech Settings, press and hold the + and - button together for 3 seconds or wait 60 seconds.

Tech Setup Steps	LCD Will Show	Adjustment Options	Default
Room Temperature Calibration	0 CALIBRATE	You can adjust the room temperature display to read up to 4° above or below the factory calibrated reading.	0°F
Cooling Swing	0.5 COOL SWING	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.	0.5°
Heating Swing	0.4 HEAT SWING	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.	0.4°

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 long as possible without making the occupants uncomfortable.

Tech Settings

Tech Settings	LCD Will Show	Adjustment Options	Default
PTAC Mode	0F PTAC MODE	Use the (+) and (-) buttons to select ON/OFF.	OFF
PTAC Fan Speeds <small>(Only displayed if PTAC mode is ON)</small>	2 FAN SPEEDS	Use the (+) and (-) buttons to select , 2 or 3. 1. Speeds: ON, Auto 2. Speeds: Low, High, Auto 3. Speeds: Low, Med, High, Auto	2
PTAC Medium Fan Speed Terminal <small>(Only displayed if PTAC mode is ON and PTAC fan speeds is set to 3)</small>	0 MED FAN TERM	Use the (+) and (-) buttons to select O/B terminals.	0
Heat Pump	0F HEAT PUMP	OFF configures the thermostat for conventional systems. ON configures the thermostat for heat pump systems.	OFF

Swing Setting 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 .5 degrees for heating and the thermostat is set at 70°F, the first stage will turn on at approximately 69.5°F. The second stage will turn on at 69°F. The second stage will turn off at 69.5°F and the first will turn off at 70.5°F. If the third stage is used, it will turn on at 68.5°F and turn off at approximately 69°F.

Tech Settings

Tech Settings	LCD Will Show	Adjustment Options	Default
System Stages	2H2C SET STAGES	Use the (+) and (-) buttons to select 1H/1C, 1H/2C, 2H/1C, 2H/2C, 3H/1C, 3H/2C, 4H/2C. Note: Heat and cool choices are limited based on conventional, heat pump, or PTAC system configuration.	2H
System Set	SYSTEM SET Off Em.Heat AutoCool	You can configure the system switch for the particular application. Heat - Off - Cool, Heat - Off, Cool - Off, Heat - Off - Cool - Auto. Note: Emergency Heat is available in heat pump mode only.	Heat Off Cool
Dual Fuel Auxiliary For Heat Pump <small>(Only displayed if heat pump is set to ON)</small>	0F DUAL FUEL	Use the (+) and (-) buttons to select ON/OFF.	OFF
Electric or Gas Fan Operation <small>(Only displayed if heat pump is set to OFF)</small>	GAS FAN SET	Select GAS to have the system control the fan during a call for heat, select Electric to have the thermostat control the fan during a call for heat. Note: If heat pump is set to "ON" this step will not show, and will default to ELECTRIC.	GAS
Satisfy Setpoint Staging <small>(Only displayed if there are more than one stage of heat or cool)</small>	0F SS STAGING	Use the (+) or (-) buttons to turn on of off.	OFF

Tech Settings	LCD Will Show	Adjustment Options	Default
Staging Delay (Only displayed if there are more than one stage of heat or cool)	OF	Use the \square or \square key to select OFF, 5, 10, 15, 30, 45, 60, or 90 minutes.	OFF
Minimum Compressor On Time	OF	You can set the minimum compressor run time to "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. Use the \square and \square buttons to change the setting.	OFF
Compressor Short Cycle Delay	ON	Selecting "ON" will not allow the compressor to be turned on for 5 minutes after the last time the compressor was on. Select "OFF" to remove this delay. Use the \square and \square buttons to change the setting.	ON
Cooling Fan Delay	OF	You can set the cooling fan delay to OFF, 10, 30, 60 or 90 seconds. If 10, 30, 60, or 90 is selected the fan will not turn on for that many seconds when there is a call for cool and will run for that many seconds after satisfying a call for cool.	OFF

Tech Settings	LCD Will Show	Adjustment Options	Default
Heat Setpoint Limit	HE	Use the \square or \square key to select the maximum heat setpoint and the minimum cooling setpoint.	90°F
Cool Setpoint Limit	CO	Use the \square or \square key to select the minimum cooling setpoint.	44°F
°F or °C	OF	Use the \square or \square key to select the maximum heat setpoint and the minimum cooling setpoint.	°F
Display Light	DL	Use the \square and \square buttons to select OFF, LOW, or HIGH. NOTE: The thermostat will need to be hardwired in order for the LOW and HIGH display light functions to work properly. "ALWAYS ON LIT" will alternate in the text field with "HARDWIRE ONLY" when HIGH is selected. These prompts will alternate every three seconds. If the thermostat is hardwired this feature will default to LOW.	OFF If Battery Powered LOW If Hardwired

Specifications

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 4.3" H x 0.9" D