PRO1

T605-2

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Hours of Operation: M-F 9AM - 6PM Eastern

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)	No
Multi-stage Systems	No
Heat Only Systems	Yes
Heat Only Systems - Floor or Wall Furnaces	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 versión en español de este manual se puede descargar en la página web de la compañía.

Table of Contents

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.

NO

NO

NO

YES
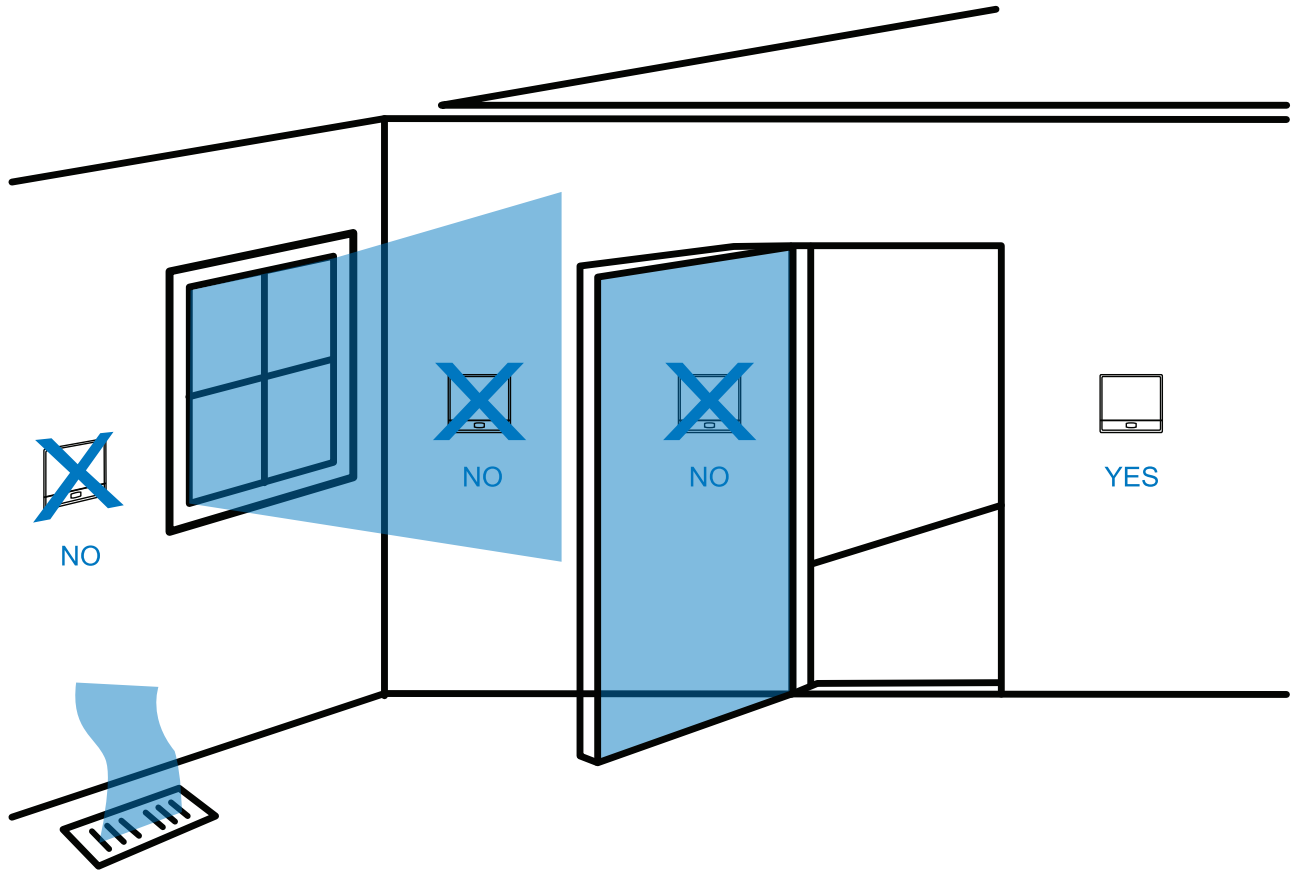
Do not install   thermostat in locations:
• Close to hot or cold air ducts
• That are in direct sunlight
• With an outside wall behind the thermostat
• In areas that do not require conditioning
• Where there are dead spots or drafts (in corners or behind doors)
• Where there might be concealed chimneys or pipes
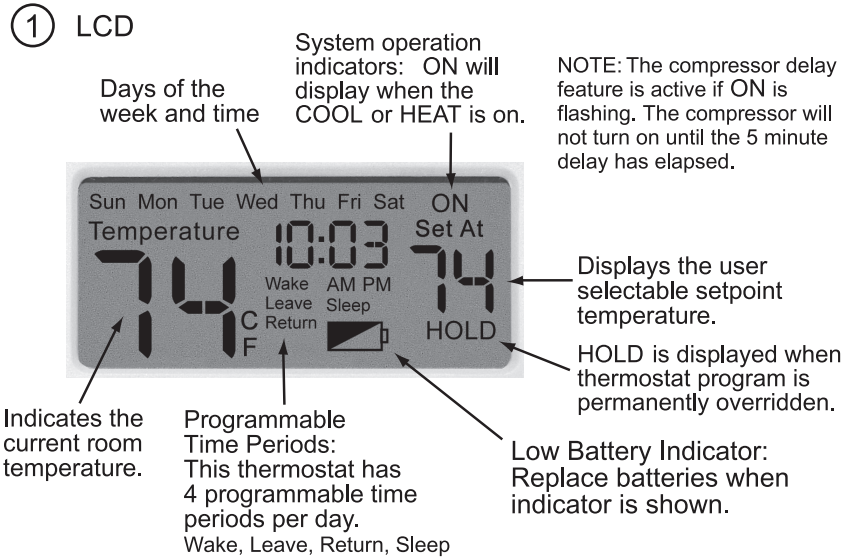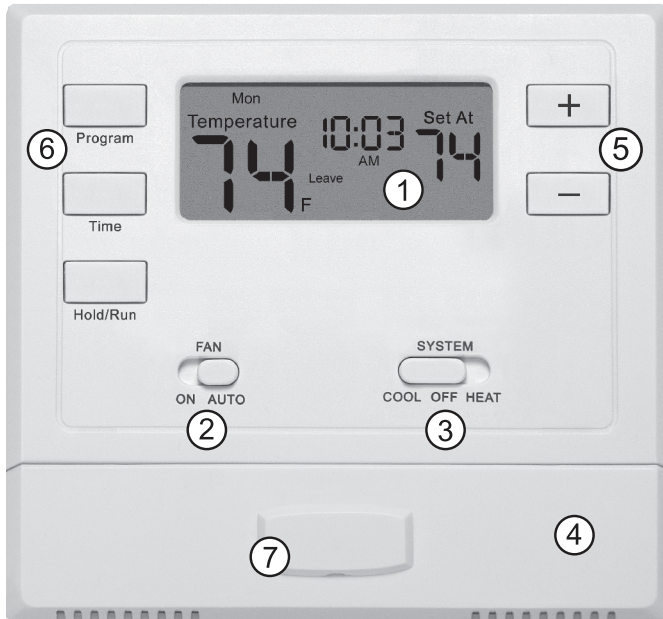• Where appliances could radiate heat

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.

Getting to know your thermostat

① LCD

Days of the week and time

System operation indicators: ON will display when the COOL or HEAT is on.

NOTE: The compressor delay feature is active if ON is flashing. The compressor will not turn on until the 5 minute delay has elapsed.

Displays the user selectable setpoint temperature.

HOLD is displayed when thermostat program is permanently overridden.

Indicates the current room temperature.

Programmable Time Periods: This thermostat has 4 programmable time periods per day.
Wake, Leave, Return, Sleep

Low Battery Indicator: Replace batteries when indicator is shown.

② Fan Switch

③ System Switch

④ Easy Change Battery Door

⑤ Setpoint Buttons

⑥ User Buttons
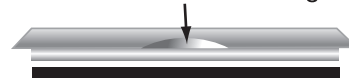
⑦ Universal Private Label Badge

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

Use the bevel on lower ridge

Magnet in door

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 our thermostats use the same universal magnetic badge.
Visit our website to learn more about our dealer imprinting programs.

**Caution:
Electrical Hazard**
Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.
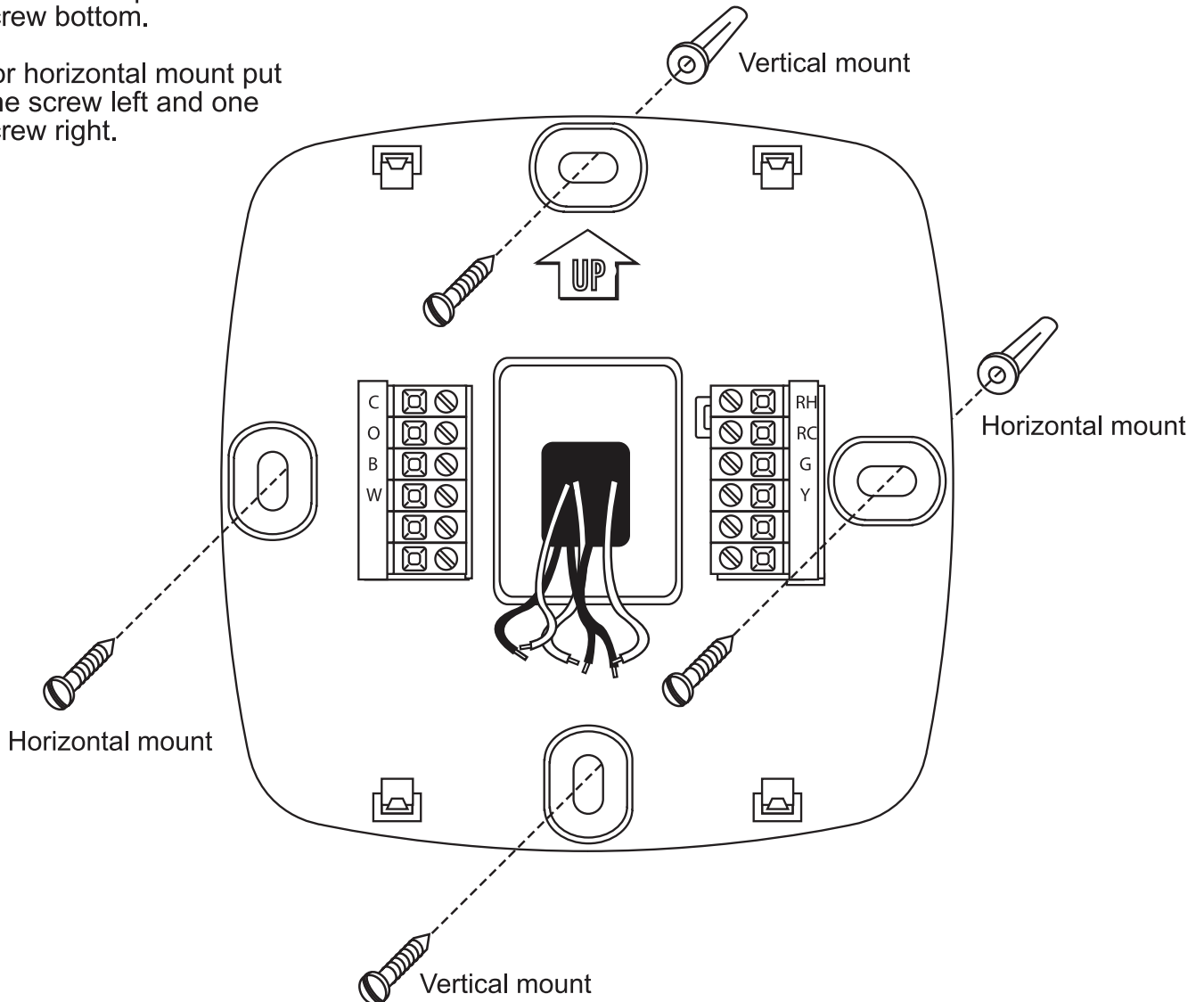
Mercury Notice:
All of our products are mercury free. However, if the product you are replacing contains mercury, dispose of it properly. Your local waste management authority can give you instructions on recycling and proper disposal.

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

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

Vertical mount

Horizontal mount

Horizontal mount

Vertical mount

UP

C O B W

RH RC G Y

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.

Caution:

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

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
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.

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.
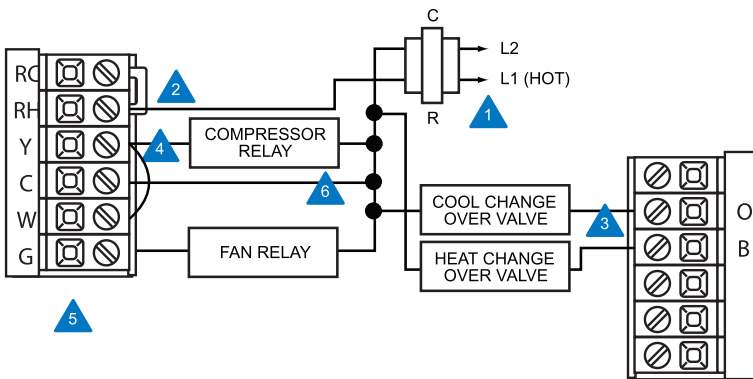
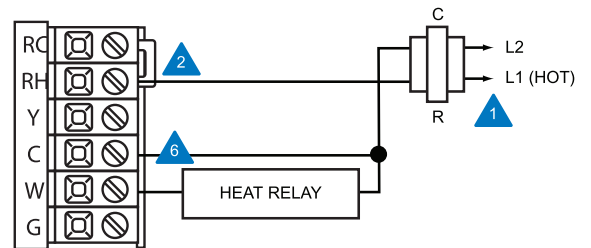## Typical 1H/1C system: 1 transformer
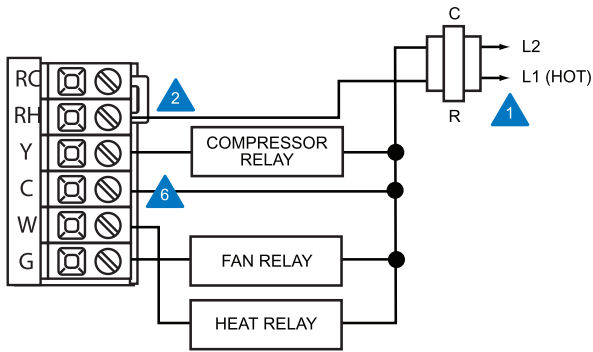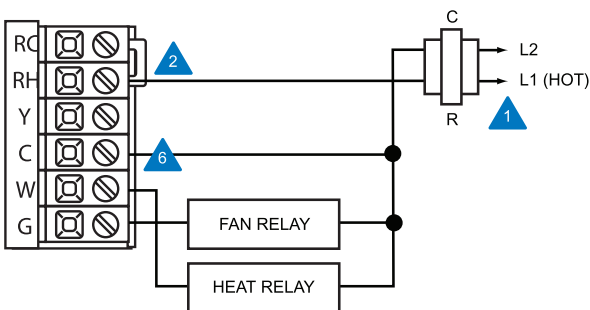

Typical 1H/1C system: 2 transformer
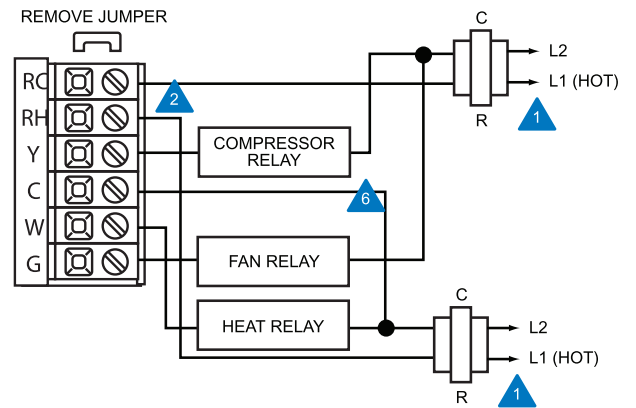
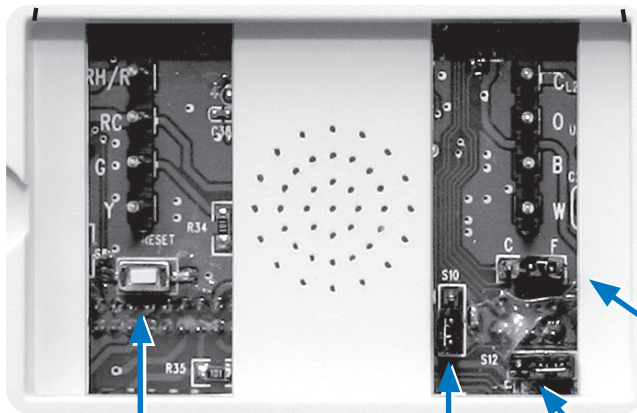## Typical 1H/1C heat pump system

Typical heat-only system

Typical heat-only system with fan

Typical cool-only system

Gas or Electric Setup

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

Electric: The thermostat operation jumper pin 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.

Fahrenheit/Celsius Display

Select F or C with the jumper pin on the back of the thermostat. F is for Fahrenheit and C is for Celsius.

12 or 24 Hour Time

12 or 24 hour (military time) can be selected with the jumper pin.

Select F or C with the jumper pin

Reset button

12 or 24 hour jumper pin

Set fan operation jumper pin

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

Technician Setup Menu

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

1. Move the **SYSTEM** switch to **OFF**.

2. To enter Filter Changer Reminder, Press and hold the time and hold/run buttons together for 3 seconds. To enter all other steps press and hold [+] and [–] buttons together for 3 seconds. This 3 second delay is designed so that homeowners do not accidentally access the installer settings.

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

Use the [+] or [–] keys to change settings and the **Program** key to move from one option to the next. **Note:** Press **Hold/Run** key when you want to exit the Technician Setup.

Feature	Filter Change Reminder	Room Temperature Calibration	Minimum Compressor On Time	Compressor Short Cycle Delay	Cooling Swing	Heating Swing
Feature Description	This feature will flash "FILT" in the display after the elapsed run time to remind the user to change the filter. A setting of "off" will disable this feature.	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.	This feature allows the installer to select the minimum run time for the compressor. For example: a setting of 4 will force the compressor to run for at least 4 minutes every time the compressor turns on, regardless of the room temperature.	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.	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	F1 OFF SE	CAL 0	An OFF On	CO On OF	dF CO 05	dF HE 04
Adjustment Options	You can adjust the filter change reminder from "off" to 2000 hours of runtime in 50 hour increments.	You can adjust the room temperature display to read -4 F to +4 F above or below the factory calibrated reading.	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.	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.	The cooling swing setting is adjustable from 0.4 F to 2.0 F. For example: A swing setting of 0.5 F will turn the cooling on at approximately 0.5 F above the setpoint and turn the cooling off at approximately 0.5 F below the setpoint.	The heating swing setting is adjustable from 0.4 F to 2.0 F. For example: A swing setting of 0.5 F will turn the heating on at approximately 0.5 F below the setpoint and turn the heating off at approximately 0.5 F above the setpoint.
Factory Default Settings	Off	0 °F	Off	On	0.5 °F	0.4 °F

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.

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 (**C** terminal connected).
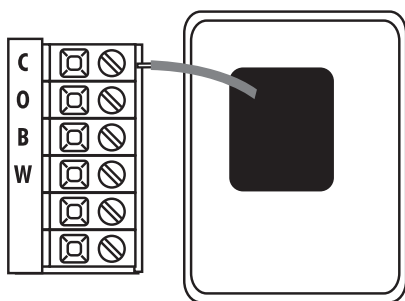
Insert 2 AA Alkaline Batteries (included). High quality alkaline batteries are recommended.

Refer to your Operating Manual for programming and operating instructions. A copy can be downloaded at the manufacturer website.

Replace AA Bateries When the low battery indicator shows in display.

Select HEAT, OFF, or COOL as needed. Select FAN ON for continuous operation or FAN AUTO to cycle fan with system.
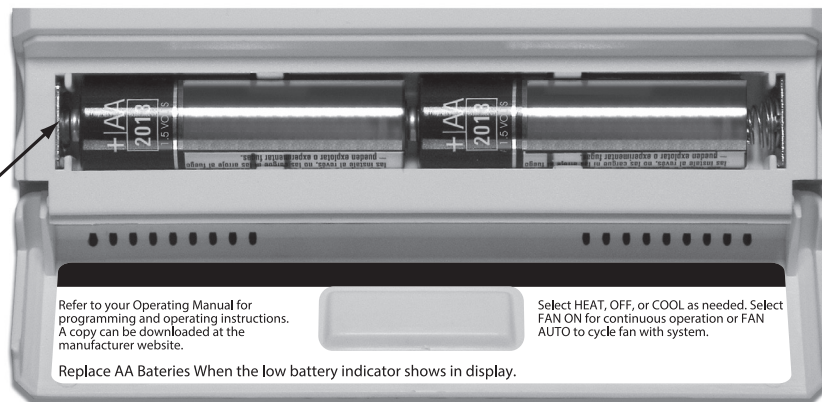
Simple operating instructions are found on the back of the battery door.

Set Time

Follow the steps below to set the day of the week and current time:

1. Press **TIME**

2. Day of the week will be flashing. Use the [+] or [–] key to select the current day of the week.

3. Press **TIME**

4. The current hour is flashing. Use the [+] or [–] key to select the current hour. When using 12-hour time, make sure the correct a.m. or p.m. choice is selected.

5. Press **TIME**

6. Minutes are now flashing. Use the [+] or [–] key to select current minutes.

7. Press **HOLD/RUN** when completed.

Programming

All our programmable thermostats are shipped with an energy saving pre-program. You can customize this default program by following the steps below.

Your thermostat can be programmed to have all the weekdays the same, a separate program for Saturday, and a separate program for Sunday. There are four time periods for each program (**WAKE, LEAVE, RETURN, SLEEP**).

Factory Default Program				
Day of the Week	Events	Time	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)
Weekday	Wake	6 a.m.	70° F (21° C)	75° F (24° C)
	Leave	8 a.m.	62° F (17° C)	83° F (28° C)
	Return	6 p.m.	70° F (21° C)	75° F (24° C)
	Sleep	10 p.m.	62° F (17° C)	78° F (26° C)
Saturday	Wake	8 a.m.	70° F (21° C)	75° F (24° C)
	Leave	10 a.m.	62° F (17° C)	83° F (28° C)
	Return	6 p.m.	70° F (21° C)	75° F (24° C)
	Sleep	11 p.m.	62° F (17° C)	78° F (26° C)
Sunday	Wake	8 a.m.	70° F (21° C)	75° F (24° C)
	Leave	10 a.m.	62° F (17° C)	83° F (28° C)
	Return	6 p.m.	70° F (21° C)	75° F (24° C)
	Sleep	11 p.m.	62° F (17° C)	78° F (26° C)

You can use the table below to plan your customized program schedule.

Programming Table				
Day of the Week	Events	Time	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)
Weekday	Wake			
	Leave			
	Return			
	Sleep			
Saturday	Wake			
	Leave			
	Return			
	Sleep			
Sunday	Wake			
	Leave			
	Return			
	Sleep			

Set Program Schedule

To customize your program schedule, follow these steps:

Weekday:

1. Select **HEAT** or **COOL** from the system switch. Note: You have to program heat and cool each separately.

2. Press **PROGRAM**

3. Monday-Friday is displayed and **WAKE** is shown. You are now programming the wake time period for the weekday setting.

4. Time is flashing. Use the [+] or [–] key to make your time selection for the weekday **WAKE** time period.

5. Press **PROGRAM**

6. The setpoint temperature is flashing. Use the [+] or [–] key to make your setpoint selection for the weekday wake period.

7. Press **PROGRAM**

8. Repeat steps 4 through 7 for weekday **LEAVE** time period, for weekday **RETURN** time period, and for weekday **SLEEP** time period.

Saturday:

9. Repeat steps 4 through 7 for Saturday **WAKE** time period, for Saturday **LEAVE** time period, for Saturday **RETURN** time period, and for Saturday **SLEEP** time period.

Sunday:

10. Repeat steps 4 through 7 for Sunday **WAKE** time period, for Sunday **LEAVE** time period, for Sunday **RETURN** time period, and for Sunday **SLEEP** time period.

11

Hold Settings

Note: This is a programmable thermostat, and will always be running a programmed schedule. However, it can be overidden with a Temporary or Permanent Hold.

TEMPORARY HOLD:

With system in Heat or Cool, anytime the set-at temperature is changed with the + or - buttons, the thermostat will enter a Temporary Hold. This will be indicated by "HOLD" flashing below the set-at temperature and will remain in this hold until the next programmed time period begins.

To manually exit this hold and return to scheduled program, press Hold/Run button twice or cycle System Switch.

PERMANANT HOLD:

To enter a Permananet Hold, press the Hold/Run Button while "HOLD" is flashing. The word "HOLD" will remain on continuosly, indicating a Permanent Hold.

To manually exit this hold and return to scheduled program, press Hold/Run button or cycle System Switch.

Specifications

The display range of temperature	41ºF to 95ºF (5ºC to 35ºC)
The control range of temperature	44ºF to 90ºF (7ºC to 32ºC)
Load rating	1 amp per terminal, 1.5 amp maximum all terminals combined
Display accuracy	± 1ºF
Swing (cycle rate or differential)	Heating is adjustable from 0.2ºF to 2.0ºF
	Cooling is adjustable from 0.2ºF to 2.0ºF
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	32º to +105º (0º to +41ºC)
Operating humidity	90% non-condensing maximum
Dimensions of thermostat	4.7"W x 4.4"H x 1.1"D