TB7220U Commercial Programmable Thermostat

OWNER'S GUIDE

63-2626-02

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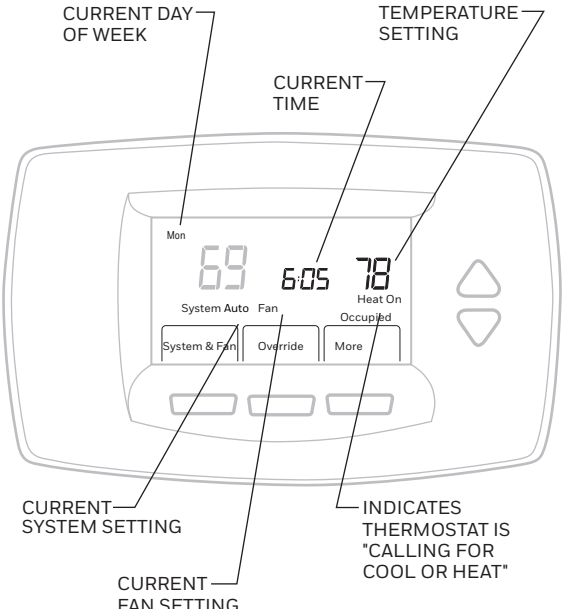
IMPORTANT

The thermostat has an LCD. Sharp instruments like a pen or pencil point can damage the thermostat.

FEATURES

- **Large, Clear Display with Backlighting—current temperature, set temperature and time are easy-to-read and all are displayed on the main screen.**
- **Menu Driven Programming—Provides guidance through the scheduling process, showing only necessary information and choices on each screen.**
- **Ability to Select Multiple Days—allows easy customizing for unique schedules.**
- **Real-Time Clock—keeps time during power failure; automatically updates for daylight saving time.**
- **Armchair Programming—can remove thermostat from wall to set the schedule.**
- **Precise Temperature Control (±1°F)—reliable, consistent comfort.**
- **Multiple OVERRIDE options—can modify schedule for a specific period of time (up to 365 days).**
- **Outdoor Temperature Indication—displays current outdoor temperature to help plan outdoor activities.**

Main Screen Selections and Display



Programming Heating and Cooling Schedule

IMPORTANT

Keep in mind that the up and down keys change the flashing number or word. When multiple items are flashing, changes affect only one of the items.

The thermostat can control up to four different schedule periods per day:
Occupied1—Work arrival time. Period to keep space at a comfortable temperature.
Unocc1—Work exit time. Period to keep space at an energy-saving temperature.
Occupied2—Second occupied period.
Unocc2—Second unoccupied period.

NOTES:

- Available schedule times are at 15-minute intervals.
- With default settings, all four periods can be programmed. This can be changed to allow only Occupied1 and Unocc1 programs. To use only Occupied1 and Unocc1, see Step 8 in the Advanced Settings section.

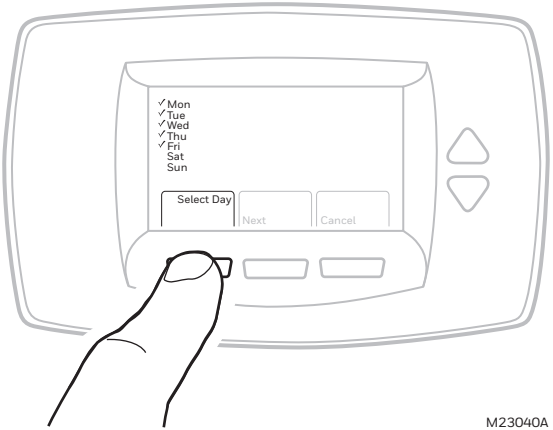
Editing Schedule

1. Press MORE.
2. Press SCHEDULE.
3. Press EDIT.
4. Use The Up and Down keys to change the flashing day.
5. Select any combination of days.

NOTES:

- Selected days schedule identical temperatures and times.
- Be sure to select all days desired before pressing NEXT.

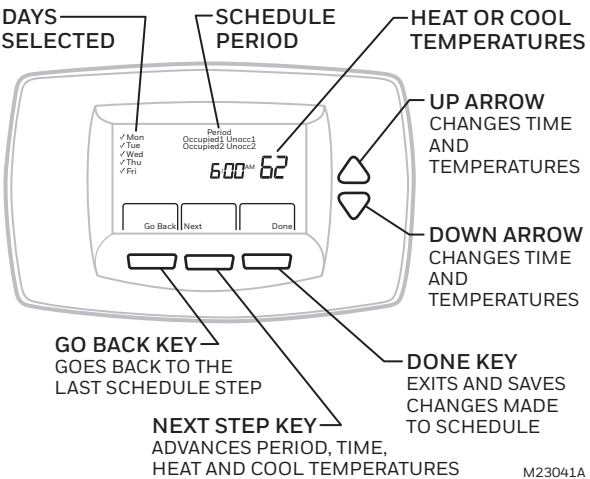
6. Press NEXT.



7. Use the Up and Down keys to change the flashing schedule period.
8. Press NEXT.

   NOTE: The selections automatically cycle through: Period, Time, Temperature.

9. Use the Up and Down keys to modify the flashing item (e.g., time, temperature).

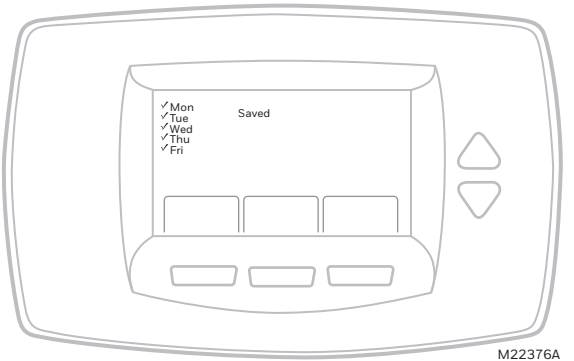


NOTES:

- Pressing DONE will save all of the changes that have been made.
- To exit scheduling without saving the current changes, press CANCEL. If that option is not available, press GO BACK until CANCEL is available.

10. When complete, press DONE.
"Saved" appears on the screen to indicate changes are saved to the day(s) indicated.

NOTE: To schedule remaining days of the week, repeat steps 1-10.



Reviewing One Day's Schedule

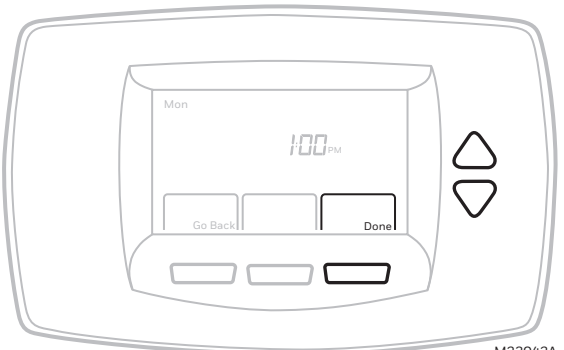
1. Press MORE.
2. Press SCHEDULE.
3. Use The Up and Down keys to change the flashing day.
4. Press VIEW.
5. Use The Up and Down keys to cycle through the scheduled periods.
6. To make changes:
   a. Press EDIT.
   b. Proceed to step 7 of the Editing Schedule section.

Setting Time

1. Press MORE.
2. Press CLOCK
3. Use arrows to set current time.
4. Press DONE.

IMPORTANT

The current day of the week should already be set correctly. If not, see the Advanced Settings section to set the day.



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Operating the Thermostat

Setting “System & Fan”

SETTING SYSTEM
The System selections vary based on the HVAC system type.
HEAT — thermostat controls the heating system.
OFF — both heating and cooling systems are off.
COOL — thermostat controls the cooling system.
AUTO — thermostat controls both the heating and cooling systems based on temperature.

SETTING FAN
Fan selections vary based on the HVAC system type.
ON—fan runs continuously. Use this setting for improved air circulation or for more efficient central air cleaning.
AUTO—fan is controlled by the system. Typically, the fan runs only during cooling or heating operation.

Setting Temperature Overrides

There are three temperature override options:
— Hold Temperature Until
— Override, and
— Holiday.

HOLD TEMPERATURE UNTIL

Holds the temperature temporarily until the time set by the user, or the next scheduled period time:

1. Press an arrow key or the Override key. TEMPORARY SET TO appears on the screen. The time defaults to the next scheduled period start time.
2. Use the Up and Down keys to change the desired temperature.

   NOTE: If HEAT or COOL begins to flash, your temporary setting is at, or beyond, the deadband. The thermostat operates based on the override setting throughout the hold time.

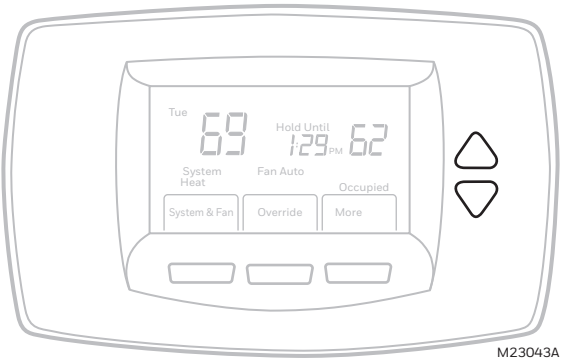
3. Press NEXT.

   NOTE: The ability to change settings remains for approximately seven seconds. Once neither the temperature nor the time continue to flash, you must restart at step 1 to make changes.

4. Use the Up and Down keys to set the desired time for the thermostat to resume the programmed schedule.

   NOTE: The installer setup can limit the length of time for an override to 1, 2, 3, or 4 hours beyond the current time.

5. Press CANCEL to cancel "Hold Temperature Until" and resume the schedule.



OVERRIDE

Changes temperature setting until the next period takes effect. For use during Unoccupied periods.

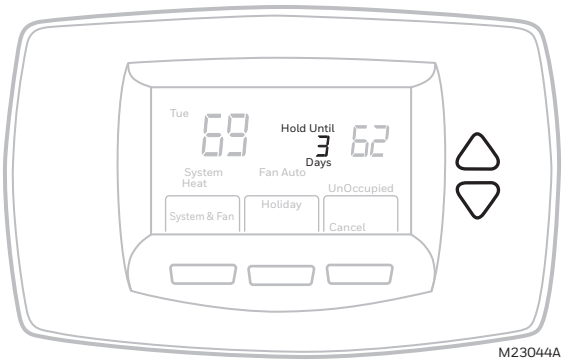
1. Press OVERRIDE. The override settings default to those contained in the next Occupied period.

   NOTE: Changes are limited to those allowed by the lockout level.

2. Use the Up and Down keys to change the override time and temperature.

HOLIDAY

Changes temperature setting for a designated number of days.



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1. Press MORE.
2. Press HOLIDAY. The temperature on the screen flashes.
3. Use the Up and Down keys to change the desired temperature for the duration of the holiday.
4. Press NEXT. The screen shows “Hold Until 1 Days”. The number flashes.
5. Use the Up and Down keys to change the number of days desired for the thermostat to override the schedule.
6. Press DONE.

NOTE: During a holiday, the word “Holiday” flashes.

7. To cancel the Holiday Override early, press CANCEL.

NOTE: When the number of Holiday Override days expires, the screen shows “Following Schedule” to indicate that the Holiday Override has ended.

Fan Status Displayed on Main Screen

AUTO—fan is controlled by the system.
ON—fan is continuously on.

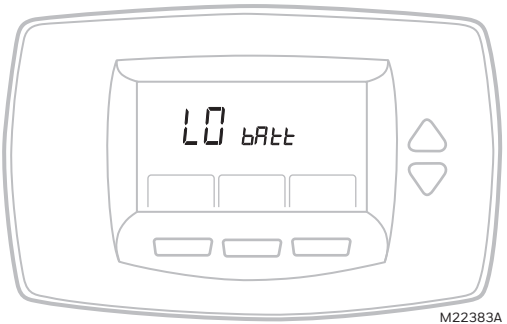
When the thermostat is running the fan, the fan blade symbol appears next to FAN to indicate the thermostat has the fan on.

NOTES:

- If the mode is Occupied, fan control is On. The only thing that allows the fan to turn off during occupied periods is a manual fan override from On to Auto.
- If the mode is Unoccupied, fan control is the same as with the Auto setting. This is true even when the display indicates “On”.
- If the thermostat is not controlling the fan, the fan blade symbol might not appear even while the fan is running.

Replacing Batteries

With proper power and connections, the thermostat does not require batteries. Thermostats with batteries provide a warning when the batteries run low. This warning flashes on the main screen for approximately 30 days.



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NOTES:

— If batteries are not replaced when Low Battery warning is flashing, the LO batt screen displays continuously and thermostat stops operating until batteries are replaced.

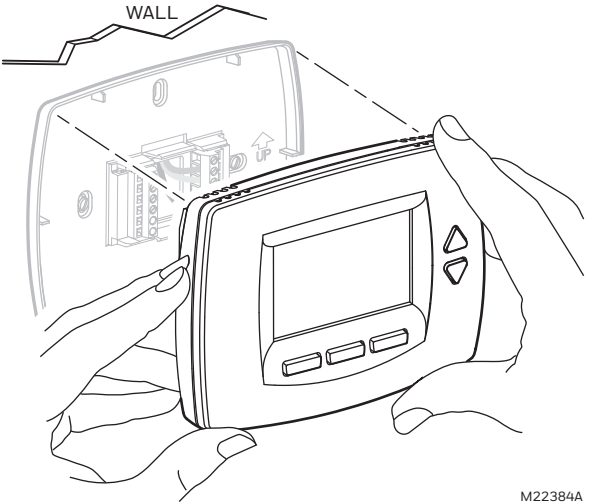
— Despite the low battery indicator, it is recommended that you replace the batteries once each year. Do this to prevent leakage and to prevent the thermostat and HVAC system from shutting down due to lack of thermostat
battery power.

Replace the batteries as follows:

1. Remove the thermostat from the base by pulling it straight out.
2. Install two new AA alkaline batteries with proper polarization.

NOTES:

- Always use AA alkaline batteries.
- All programming (Schedule, Date and Time) information is retained during battery replacement.

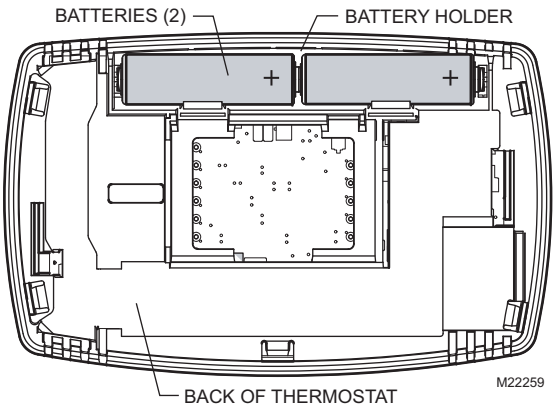


3. Place the thermostat back on its base:
   a. Align the terminal screw blocks with the pins on the back of the thermostat.
   b. Push the thermostat straight onto the base.

NOTES:

— After two minutes, the device automatically returns to the main screen.

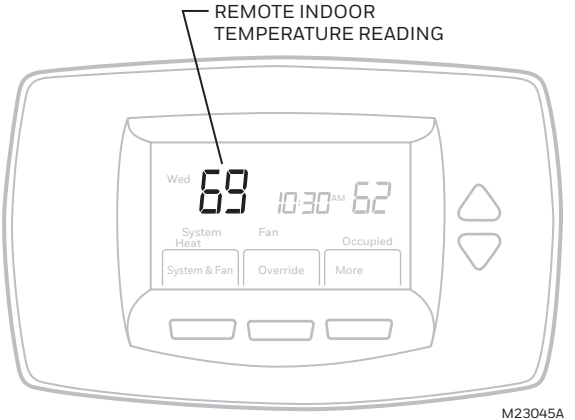
— To return to the main screen before the two minutes pass, press a key.



Reading Remote Indoor Temperature

If connected to an installed remote indoor temperature sensor, the thermostat displays the indoor temperature from the remote sensor(s).

NOTE: When connected to an installed remote indoor temperature sensor, the thermostat internal sensor is not used.



ONE REMOTE INDOOR SENSOR INSTALLED

If one remote indoor temperature sensor is used, the screen showing the *Inside* temperature reading displays the temperature at the indoor remote sensor location.

MULTIPLE REMOTE INDOOR SENSORS INSTALLED

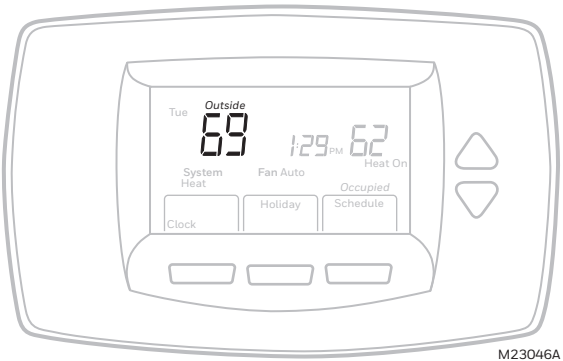
If more than one remote indoor sensor is used, the screen showing the *Inside* temperature reading displays the average of all the remote indoor sensors.

Reading Outdoor Temperature

If connected to an outdoor sensor, the thermostat displays the *Outside* temperature.

VIEW OUTSIDE TEMPERATURE

The *Outside* temperature is located in the lower right corner of the main screen. If it is not on the main screen, view the outdoor temperature by pressing MORE until the outside temperature shows.



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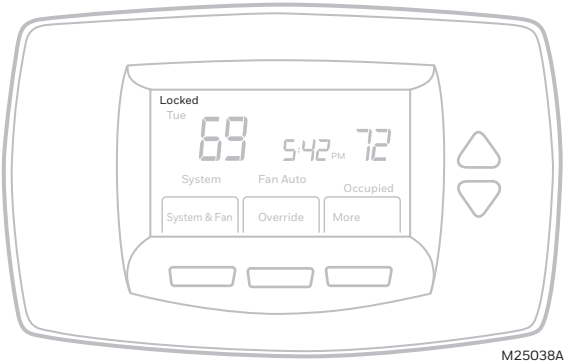
Keys Locked

Some key control can be fully or partially locked. When the thermostat displays “Locked”, key control is either fully or partially locked.

NOTE: In order to change the key lock setting, the user must have details beyond the scope of this document.



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Fully Locked Keys

In this mode, the entire interface is locked and not functional. The screen continuously displays “Locked”.

Partially Locked Screen

When partially locked:

— Pressing a locked key prompts the screen to indicate “Locked” for five to seven seconds.

— Pressing an unlocked key with “Locked” shown removes “Locked” from the display.

PARTIAL LOCKOUT 1

This mode locks all keys except HOLIDAY, OVERRIDE, Up and Down. Standard procedures are used to incorporate the temporary changes made with these keys. See the Setting Temperature Overrides section for details.

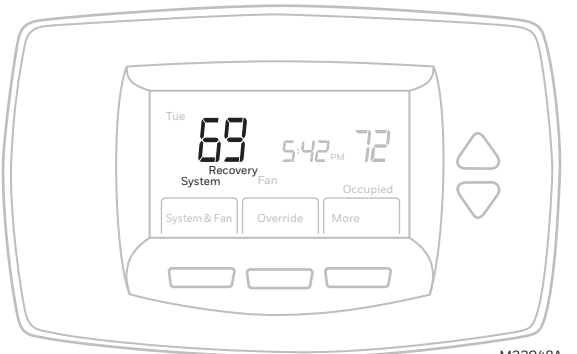
PARTIAL LOCKOUT 2

This mode locks all keys except HOLIDAY and OVERRIDE:

- Selecting HOLIDAY sets the temperature to the Unoccupied setting. The temperature setting cannot be changed. The number of days to hold the holiday can be changed. After this time, the next Occupied period switches back to the program settings.
- Selecting OVERRIDE sets the temperature to the Occupied setting. The temperature setting cannot be changed. The period of time to hold the override can be changed. After this time, the next Unoccupied period switches back to the program settings.
- To cancel the temperature override and follow the programmed schedule, press CANCEL.

Temperature Recovery

The thermostat is equipped with a feature to eliminate guesswork when setting a schedule. That is, the user need not know the amount of time for the HVAC system to bring the space to temperature (without overshoot) prior to the scheduled time.The thermostat manages that automatically.



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Simply program the desired time to have space at comfort temperature. In addition, program temperature to comfort temperature. The thermostat activates the heating or cooling at the proper time to reach the set temperature at the scheduled time.

NOTE: The setpoint changes gradually to use economical stages and avoid overshoot.

For example—the space will be occupied at 8:00 AM and the desired temperature is 70°F. Set the Occupied1 period for 8:00 AM and 70°F. The thermostat turns on the heat prior to 8:00 AM to raise the temperature to 70°F by 8:00 AM.

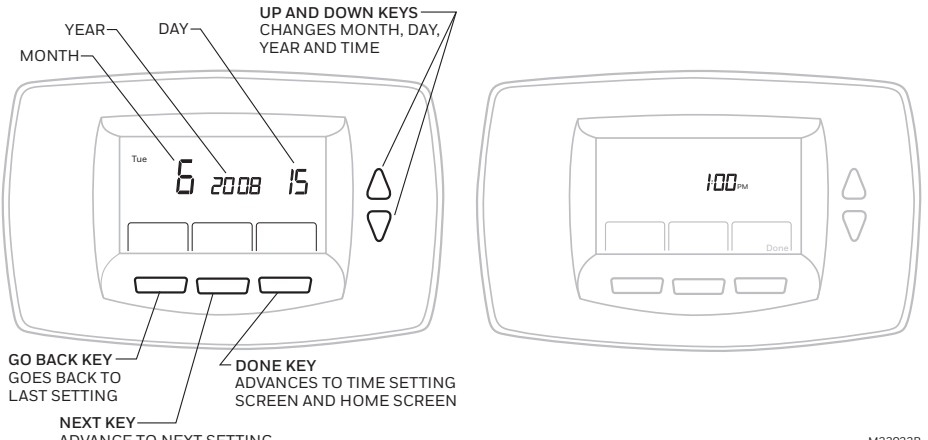
The thermostat provides an alert that the heating or cooling system is coming on before a scheduled time by displaying “Recovery” on the screen.

Setting Calendar

This thermostat is designed to, under normal use, automatically keep the current time and day in the memory for up to ten years once the calendar is set. There are two ways to set the calendar for this thermostat:

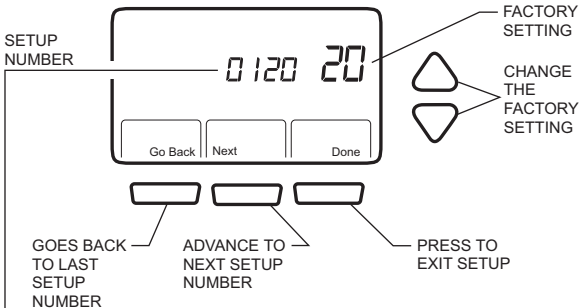
SETTING CALENDAR WHEN THERMOSTAT IS FIRST POWERED

When first powered, the thermostat proceeds through a sequence of screens to set the calendar.



SETTING CALENDAR AFTER THERMOSTAT IS ALREADY FUNCTIONING

See the Steps (1 through 4), in the Advanced Settings section, to set year, month and day.



Setup Number	Setup Name	(Select Your Setting) Settings
0120	Date (Year Upper)	Select first two digits of current calendar year (20 for year 2005, etc).
0130	Date (Year Lower)	Select last two digits of current calendar year (05 for year 2005, etc).
0140	Date (Month)	Select number that represents current calendar month.
0150	Date (Day)	Select number that represents current calendar date.

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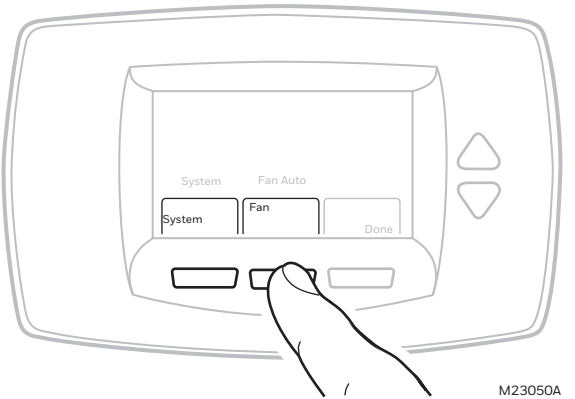
Advanced Settings

The thermostat has many advanced settings to match the HVAC system. These settings can be adjusted to match specific needs:

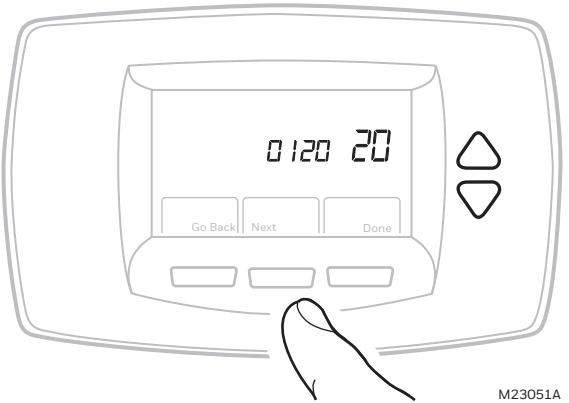
1. From the main screen, press SYSTEM & FAN.
2. Press and hold FAN for approximately five seconds.
3. The Setup Number displays in the middle of the screen. It is a four-digit code beginning with zero. The current setting is displayed to the right.



NOTE: Use the Up and Down keys to change the Setup Number.

Step 1. User Setup Number 0120: First Two Digits of Current Calendar Year.

To change the current setting, use the Up and Down keys.
Options:
20 — for years 20xx.
21 — for years 21xx.



Step 2. User Setup Number 0130: Last Two Digits of Current Calendar Year.

To change the current setting, use the Up and Down keys.
Options:
01 through 99 — for years 2x01 through 2x99.

Step 3. User Setup Number 0140: Current Calendar Month.

To change the current setting, use the Up and Down keys.
Options:
1 through 12 — for January through December.

Step 4. User Setup Number 0150: Current Calendar Date.

To change the current setting, use the Up and Down keys.
Options: 1 through 31 — for first of a month to 31st of a month.

Step 5. User Setup Number 0160: Schedule Options.

To change the current setting, use the Up and Down keys.
Options:
0 — non-programmable. Thermostat is nonprogrammable.
4 — programmable. Thermostat is fully programmable, allowing all 7 days to be programmed.

Step 6. User Setup Number 0320: Display Temperature Shown in °F or °C.

To change the current setting, use the Up and Down keys.
Options:
0 — Fahrenheit.
1 — Celsius.

Step 7. User Setup Number 0330: Daylight Saving Time On or Off.

To change the current setting, use the Up and Down buttons.
Options:
0 — Off. Thermostat time does not adjust automatically for Daylight Saving Time.
1 — On. Thermostat time adjusts automatically for Daylight Saving Time in Fall and Spring.

Step 8. User Setup Number 0540: Number of Programmable Periods per Day.

To change the current setting, use the Up and Down buttons.
Options:
2 — 2 periods per day.
4 — 4 periods per day.

Step 9. User Setup Number 0640: Time Format.

To change the current setting, use the Up and Down buttons.
Options:
12 — 12 hour clock.
24 — 24 hour clock.

Step 10. Exit User Setup

Press DONE to exit Advanced Settings and return to the main screen.

Frequently Asked Questions and Answers

Q: When making changes, the wrong setting is being changed; Why?
A: Whatever is flashing on the screen is the item that the up and down buttons affect.

Q: The keys (some or all) do not work: why not?
A: Thermostat is locked. See Locked Keypad sections.

Q: Backlighting seems dim; is it designed to be dim?
A: When using batteries for power, install fresh AA alkaline batteries.

Q: Thermostat is asking for heating or cooling to come on (screen shows “Heat On” or “Cool On’ in display) but there is not heating or cooling running.
A: Call your local heating and/or cooling contractor to check your system.

Q: Why doesn’t the thermostat respond when I press a key?
A: Check to determine if the device is in the Locked mode. See Locked Keypad sections.

Q: Why doesn’t the fan run when the thermostat indicates “On”?
A: If the mode is Unoccupied, the fan control is the same as with the “Auto” setting. This is true even when the display indicates “On”.

Limited Two-Year Warranty

Resideo warrants this product, excluding battery, to be free from defects in workmanship or materials, under normal use and service, for a period of two (2) years from the date of first purchase by the original purchaser. If at any time during the warranty period the product is determined to be defective due to workmanship or materials, Resideo shall repair or replace it (at Resideo's option).

If the product is defective,
(i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it; or
(ii) call Resideo Customer Care at 1-800-468-1502. Customer Care will make the determination whether the product should be returned to the following address: Resideo Return Goods, Dock 4 MN10-3860, 1885 Douglas Dr. N., Golden Valley, MN 55422, or whether a replacement product can be sent to you.

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Resideo that the defect was caused by damage which occurred while the product was in the possession of a consumer.

Resideo's sole responsibility shall be to repair or replace the product within the terms stated above. RESIDEO SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

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