



Basic Training For Your Programmable Thermostat

You can significantly reduce your energy bills by investing a little extra effort to train your thermostat.

Programmable thermostats turn off your heating, fan and air conditioning when you are not there. This saves much more heating, cooling and fan energy than it takes to heat up or cool down the space when you return. In a commercial facility, typical savings can be as high as 15 percent of your heating and cooling energy bill if your thermostat is properly programmed.

Administrative Actions

Step 1

Establish an acceptable temperature policy, and set occupied heating and cooling temperatures appropriately. For most buildings we recommend year-round settings of 70°F for heating and 76°F for cooling. These settings give a good balance between efficiency and comfort. (See our

Tech Brief, *The Truth about Comfort*, for more information.) Determine your desired temperature setpoints and fill out Table 1. Suggested temperatures are in parenthesis. Make sure your occupied cooling setpoint is at least four degrees higher than your occupied heating setpoint.

Step 2

Determine the typical occupied schedules during which you will provide heating or cooling. Most thermostats allow for occupant override during unoccupied hours, so you don't need to include these "after hours" times in your schedule. Fill in times for each schedule change in Table 2. Leave the second occupied period blank if you don't have a regular evening event.

Step 3

Designate someone at your facility to be the "thermostat expert." Have them read the back of this brief.



Then, work with your expert to fill out the temperature and schedule tables below. Make sure the expert also has a complete holiday schedule.

Step 4

Make sure the staff understands how to use the temporary warmer/ cooler adjust buttons or override button when they come in after hours or on weekends. They should be explicitly told not to use the "hold" button, as that does not allow setback to occur. Communicate the acceptable temperature policy. If you do experience tampering with the thermostats in your facility, then consider locking covers or remote sensors. Some thermostats have electronic security features.

Table 1: Acceptable Temperature Policy		
Time Period	Heating Setpoint	Cooling Setpoint
Occupied	(70°F)	(76°F)
Unoccupied	(60°F)	(85°F)

Table 2: Schedules							
Time Period (Period Name)	Mon	Tue	Wed	Thu	Fri	Sat	Sun
First Occupied Start (Wake/Ocp1 start)							
First Unoccupied (Leave/Ocp1 stop)							
Second Occupied Start (Return/Ocp2 start)							
Second Unoccupied (Sleep/Ocp2 stop)							

Programming Your Thermostat: Detailed Actions

To get maximum savings, train your programmable thermostat as follows:

Step 1

Get the instructions* for your thermostat and determine the following:

- Schedule type: (a) different schedule for each day of the week (7-day), (b) one schedule for weekdays and one for weekends (5/2 program), or (c) three schedules for weekdays, Saturday, and Sunday (5/1/1 program).
- Start type: Most thermostats have an optimized start feature that will calculate how long the system needs to run to warm-up or cool down the building.
- Are there batteries? If so, how often do they need replacement? Replace AAs annually.

Step 2

Review the schedules you filled out in Table 2. If you don't have a 7-day thermostat, establish a typical weekday schedule. If you have a 5/2 thermostat, establish a typical weekend schedule.

Step 3

Make sure the correct current time and day are set on the thermostat.

Step 4

- Set your thermostat program for each time period for Monday.
- If you have an optimized start thermostat, set the start time when you want the space to be comfort-able. If not, set the start time about one hour earlier for warm-up.
- Put the correct temperatures from Table 1 in for each period.** Make sure you enter both heating and cooling setpoints. Often a thermostat will have four periods a day so

make sure that all periods have unoccupied temperatures or are scheduled off except the occupied period.

Step 5

Copy the program to the next day, following your thermostat's instructions. Adjust schedules if different, and continue the copy process until all days are programmed.

Step 6

Be sure that unoccupied weekend days are set to the unoccupied temperature.

Step 7

Review the program by progressing through the days and time periods without changing.

Step 8

When you are done, make sure you activate the program by using the "run program" button (Honeywell) or setting the mode so the program is "on" (Totaline).

Ongoing Maintenance

Unless your thermostats are connected to a network, they don't know about daylight savings time or holidays. You have to attend to this regularly, along with battery changes.

- Twice a year, change the time on all thermostats for daylight savings. It's a good time to review the time and temperature settings, and attend to battery changes if needed.
- The day (or Friday) before every holiday, use the "hold" or "continuous unoccupied" button to maintain an unoccupied temperature. Newer thermostats allow you to input the number of days to hold, while older thermostats require you to return after the holiday and press the "run program" button.

Advanced Programming

If you have heat pumps or other systems with electric resistance heat, special setup is needed to minimize electrical demand. If you have limited occupancy that occurs before or after business hours, advanced programming can save you more.

In any of these cases, get the *Advanced Training for Your Programmable Thermostat Tech Brief*. You can download it from <www.eweb.org> (click "Saving Energy" then "Energy Tips for Work," then "Tech Briefs" at the bottom) or call for a copy.

If you have questions about setting up your system for maximum efficiency, then call EWEB's Energy Answers line at 541-685-7000 to talk to an EWEB energy expert.

** You can often get by with the instructions on the thermostat panel. For more detailed instructions consult your owner's manuals. You can usually find them online:*

Honeywell:
<www.honeywell.com>;
Totaline/Carrier/Bryant: <www.totaline.com>

*** Some thermostats, like the Honeywell n300, have a master entry for occupied and unoccupied heating and cooling setpoints, so the temperature setpoint is not entered for each period.*