

Owner's Manual

Part Number 33CSCPACHP-01

SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage thermostat.

Recognize safety information. This is the safety alert symbol . When the safety alert symbol is present on equipment or in the instruction manual, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety alert symbol. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies a hazard which could result in personal injury or death. CAUTION is used to identify unsafe practices which would result in minor personal injury or property damage.

GENERAL

Carrier's Comfort Pro programmable thermostats are wall-mounted, low-voltage thermostats which maintain room temperature by controlling the operation of a heating and/or air conditioning system. This thermostat can be used with a heat pump, air conditioner or water source heat pump operation. A variety of features are provided including battery operation, separate heating and cooling set points, auto changeover, keypad lockout, and backlighting. Programming is available for either 2 or 4 periods per day. The programming interface is a one touch interface, with the Comfort selections Occupied, Unoccupied, and Limit (Energy Savings Mode). The user can adjust the heating and/or cooling set points for each of the three comfort selections.

OPERATION

Thermostat Button Identification — The following buttons are located on the thermostat display. See Fig. 1 for button locations.

- FAN (1) — Selects whether the fan operates continuously (on) or only when needed for heating or cooling (auto)
- HOLD/RUN (2) — Holds the currently selected temperature or runs the scheduled program
- MODE (3) — Selects whether thermostat is set for heating, cooling, emergency heat, auto (heat and cool as needed), or off
- UP (4) — Increases the temperature or adjusts the screen selection up when setting advanced programming features
- DOWN (5) — Decreases the temperature or adjusts the screen selection down when setting advanced programming features

- DONE (6) — Saves settings when completing a set-up or programming step
- LIMIT (7) — Indicates occupied heating and cooling settings for the program period which are predefined and more energy efficient
- UNOCC (8) — Activates heating and cooling settings for the unoccupied program period
- OCC (9) — Activates heating and cooling settings for the occupied program period
- D/H/M SET CLOCK (10) — Activates clock set mode day/hour/minutes settings
- START TIME (11) — Activates the programming menu, displaying the programmed start times
- PERIOD (12) — Activates the programming menu, displaying the programmed time periods
- DAYS (13) — Activates programming menu, displaying three options - all days, weekdays and weekends

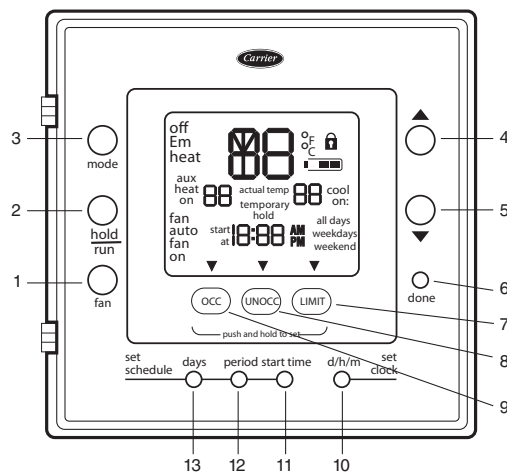


Fig. 1 — Thermostat Button Identification (Door Open)

Thermostat On-Screen Indicators — The following on-screen indicators can be displayed on the thermostat display. See Fig. 2 for location of indicators.

- Clock (1)
- Fan mode - on or auto (2)
- Selected heating set point; "on" indicates system is in heating mode (3)
- System is in auxiliary (supplemental) mode (4)
- Current temperature (5)
- Thermostat mode is either off or using emergency heat (Em Heat) (6)
- Fahrenheit units (7)
- Keypad is locked (no padlock means unlocked) (8)

- Celsius units (9)
- Battery strength indicator (10)
- Selected cooling set point; "on" indicates system is in cooling mode (first stage of cooling) (11)
- Second stage of cooling (12)
- Day of the week for programming mode (13)
- System is using Limit settings (14)
- AM or PM indicator for current time (15)
- System is using unoccupied settings (16)
- System is in hold (17)
- System is in temporary hold override (18)
- System is using occupied settings (19)

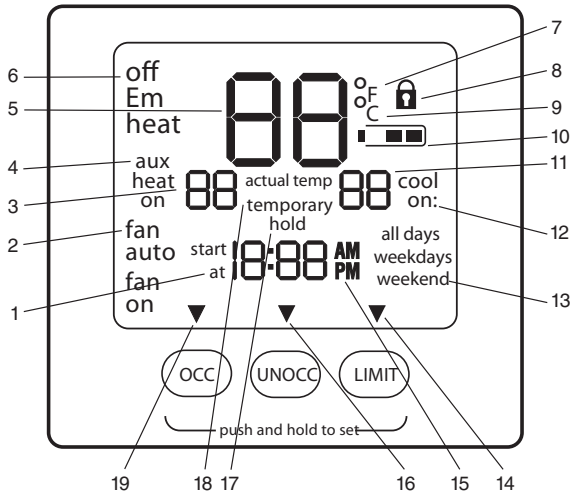


Fig. 2 — Thermostat On-Screen Indicators

Setting Time and Day of Week — The user must set the time and date before the thermostat's programming features can be used. Perform the following procedure:

1. Open the thermostat front panel door.
2. Press the **d/h/m** button located on the lower right under the display screen. The hours will be displayed and will flash.
3. Press the **up** or **down** button located to the right of the display to change the hours. Rotate through the hours to change AM and PM.
4. Press the **d/h/m** button again and the minutes will flash on the display.
5. Press the **up** or **down** button to change the minutes. Stop on the correct number.
6. Press the **d/h/m** button again and the day of the week will flash on the display.
7. Press the **up** or **down** button to change the day of the week. Stop on the correct day.
8. Press the **done** button or close the thermostat front panel door.

Setting Cooling and Heating Temperatures — The thermostat is installed with preset cooling and heating temperature settings. The user can use these settings or change them. Perform the following procedure to change temperature settings:

1. Open the thermostat front panel door.
2. Press the **up** or **down** button located on the right side of the display. The preset temperature settings for cooling and heating are displayed. The word "cool" will flash.
3. Press the **up** or **down** button to change the cool setting. Stop on the correct setting.

NOTE: The temporary hold icon will be displayed for 15 minutes. See page 3 for more information on Temporary Hold Override.

4. To change the heating set point, press the **mode** button until the heat icon begins to flash.
5. Press the **up** or **down** button to change the heat setting. Stop on the correct setting.
6. For automatic switching from the cooling cycle to the heating cycle or from heating to cooling, both the cooling and heating settings must be displayed. If cooling only is desired, only the cooling set point should be shown. If heating only is required, only the heating set point should be shown in the display. To change which modes are displayed, continue to press the **mode** button until the desired modes of operation are displayed.
7. Press the **hold/run** button to save these settings.

Using OCC, UNOCC and LIMIT Buttons —

When the user presses the **OCC**, **UNOCC**, or **LIMIT** button, the preset temperature settings will be viewed and a triangle icon will appear above the **OCC**, **UNOCC**, or **LIMIT** button indicating which presets are being used.

The **LIMIT** button is used for an occupied period with settings that are less conditioned than the Occupied settings but more conditioned than the unoccupied settings. This is used as an occupied energy savings function.

The default set points for the Comfort settings **OCC**, **UNOCC** and **LIMIT** are listed in Table 1.

Table 1 — OCC, UNOCC, and LIMIT Settings

ONE-TOUCH SETTING	HEAT SET POINT	COOL SET POINT
OCC	68	78
UNOCC	60	85
LIMIT	66	80

The set points for the **OCC**, **UNOCC**, and **LIMIT** One-Touch functions can be modified from their factory defaults using the following procedure:

1. Open the thermostat front panel door. The heat or cool icon flashes indicating to the user that pressing the **up** and **down** buttons will change the set point value next to the flashing icon.
2. Change the setpoint of the flashing mode by pressing the **up** or **down** button. The heat or cool icon and the triangle icon above the **OCC**, **UNOCC**, and **LIMIT** button will flash.
3. If desired, change the set point of the opposite mode by pressing the **mode** button until the opposite mode icon is flashing. The opposite mode icon and the triangle icon above the **OCC**, **UNOCC**, and **LIMIT** button flashes.
4. Press the **up** or **down** button to change the opposite mode set point.
5. Then press and hold either **OCC**, **UNOCC**, or **LIMIT** button for 3 seconds. The triangle icon above the **OCC**, **UNOCC**, or **LIMIT** button will stop flashing and remain on. The heat and/or cool set point will flash once when complete.

NOTE: The thermostats are shipped with fully accessible keypads. The installer has the option to change the access to the keypad. This function will not be allowed if keypad lock 2 or 3 is enabled. This will be allowed if the keypad lock is disabled or set to 1.

6. Close thermostat door.
7. Repeat at Step 1 to program set points for another period, if desired.

Programming Schedules — The Comfort Pro programmable thermostat gives the user the option of programming for all days, weekdays, or weekends. The thermostat is preprogrammed at the factory with the same settings for all seven days. See Table 2.

Table 2 — Schedule Factory Settings

PERIOD	START TIME	HEAT SET POINT	COOL SET POINT
P1 (OCC)	6 AM	68	78
P2 (OCC)	8 AM	68	78
P3 (OCC)	3 PM	68	78
P4 (UNOCC)	6 PM	60	85

Prior to programming a customized schedule, fill out the Daily Schedule Planner in Table 3.

Table 3 — Daily Schedule Planner

DAY	SCHEDULE			
	P1 Occ	P2 Occ2	P3 Occ3	P4 Unocc
	Start/Heat/Cool	Start/Heat/Cool	Start/Heat/Cool	Start/Heat/Cool
Mon	/ /	/ /	/ /	/ /
Tue	/ /	/ /	/ /	/ /
Wed	/ /	/ /	/ /	/ /
Thu	/ /	/ /	/ /	/ /
Fri	/ /	/ /	/ /	/ /
Sat	/ /	/ /	/ /	/ /
Sun	/ /	/ /	/ /	/ /

NOTE: The cooling temperature set point must be higher than the heating temperature set point. (The temperature difference may be changed in the advanced set up configuration by the installer.)

To set up a different schedule, perform the following procedure (see Fig. 3):

1. Open the thermostat front panel door.
2. Press the **set schedule days** button until the screen displays the programming method of **all days**, **weekdays** or **weekend** icons at the right of the screen. Press the **up** or **down** button to change as necessary to the desired programming selection icon.
3. Press the **period** button to continue programming the thermostat. The periods are displayed as **P1** through **P4** if Option 25 was set to 4 periods/day or **P1** through **P2** if Option 25 was set to 2 periods/day. Press the **period** button to display the next programmable period.
4. As each period is displayed, the comfort setting that is used for that period is displayed, along with whether it is in the occupied, unoccupied or limit configuration as shown by the triangle over the **OCC**, **UNOCC** or **LIMIT** buttons. Change the **OCC**, **UNOCC** or **LIMIT** configuration by pressing the appropriate button and the triangle will move to that setting.
5. To change the time for a period, press the **start time** button and use the **up** and **down** buttons to change the hours.
6. Press the **start time** button again to change the minutes using the **up** and **down** buttons.
7. To go to the next programming period press the **period** button twice. Enter in the changes for all of the periods as described in Steps 4, 5 and 6 above.
8. Press the **done** button when complete.
9. Close the thermostat door.

NOTE: Once a change is made to the programming schedule, it is saved when the user moves along to the next programming

interval or level. Changes within a given programming period are considered temporary changes that require user confirmation by either closing the door or pressing the **done** button which would confirm any changes made up to that point.

If dashes "--:--" appear in the display this is an indication that the start time in the period displayed is not the same start time in all periods. Press the start time and update the time for the HVAC equipment to start.

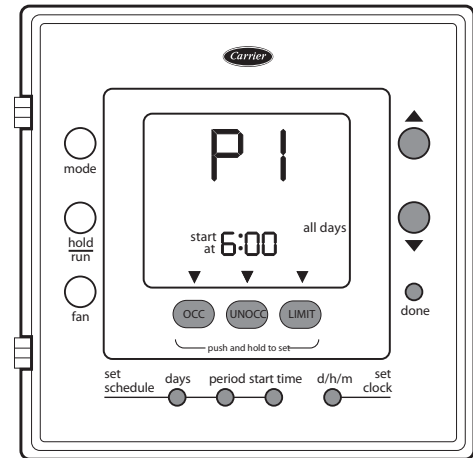


Fig. 3 — Programming the Thermostat

Temporary Hold Override — The user can temporarily change the temperature from the programmed set points. Perform the following steps to temporarily override the thermostat:

1. Open the thermostat front panel door.
2. Press the **up** or **down** button. This will cause the set point to be displayed.
3. Press the **up** or **down** button again to increment or decrement the displayed set point. This will cause the temporary hold icon to be displayed below the temperature and replace the clock with the 0:15 minute override time.
4. The temporary hold remains active until a power cycle is encountered, the override time has expired, off mode is selected, or the user presses the **hold** button.
5. To change the override time displayed in the clock location, press the **start time** button. Each press of the **start time** button increments the override time by 15 minutes up to the maximum value set by the installer.
6. Once the temporary hold is cleared, the override will be considered inactive and the set point will reflect the program schedule set point.
7. Close the thermostat door.

Holding Temperature Set Points — The user can override the programmed temperature settings and hold the temperature at a specific setting. To override the temperatures, perform the following procedure:

1. Open the thermostat front panel door.
2. Press the **hold** button (see Fig. 4). This will hold the current comfort setting and the program schedule will be ignored as long as the hold remains active.
3. Pressing the **hold** button again will return the thermostat to the current programming schedule.
4. Close the thermostat door.

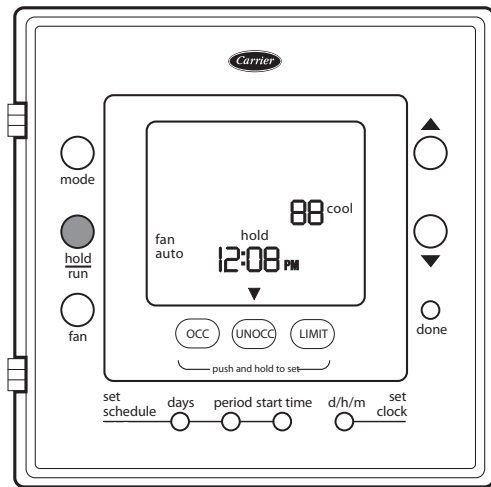


Fig. 4 — Holding Temperature Set Points

Turning Heating and Cooling System Off —

To use the thermostat to turn the heating and cooling system off, perform the following procedure:

1. Open the thermostat front panel door.
2. Press the **mode** button until the display shows "off" in the upper left corner.
3. Close the thermostat door.

Advanced Programming — The user can customize two different features on the thermostat, the Fahrenheit or Celsius display and the backlighting of the thermostat.

FAHRENHEIT OR CELSIUS DISPLAY — The thermostat is preset to display the temperature in degrees Fahrenheit. The user can change the display to Celsius if desired. To change the display, perform the following procedure:

1. Open the thermostat front panel door.
2. Press and hold the **OCC** and **LIMIT** buttons simultaneously for three seconds. The screen will display flashing "U2" and the F or C setting.
3. Press the **mode** button to change the flashing "U2" to the F or C setting.
4. Press the **up** or **down** button to select either F or C.
5. Press the **fan** or **done** button.
6. Close the thermostat door.

BACKLIGHTING — The thermostat can be set to have the backlighting either Off or On. To change the backlighting selection, perform the following:

1. Open the thermostat front panel door.
2. Press and hold the **OCC** and **LIMIT** buttons simultaneously for three seconds. The screen will display a flashing "U2", press the up button to display the flashing "U3" and the On or Off backlight setting.
3. Press the **mode** button to change the flashing "U3" to the On (or Off).
4. Press the **up** or **down** button to select On or Off.
5. If Off is selected, the thermostat backlight will normally be off. It will turn on with any button press and stay on for 10 seconds between button presses. After 10 seconds of no button presses, the backlight turns off until another button press occurs.
6. If On is selected, the thermostat backlight will normally be on and dim in appearance. The backlight brightness becomes brighter with any button press and remains bright for 10 seconds. After 10 seconds of no button

presses, the backlight returns to a dimmer level until another button press occurs.

7. To exit the user configuration screen, press the **fan** or the **done** button.
8. Close the thermostat door.

Using the Fan — The thermostat is factory configured so that the fan runs continuously (Fan On mode) during the occupied or limit period. If the installer has configured the thermostat to allow operation in the Fan Auto mode, the fan will run only when heating or cooling is required. To change the fan setting:

1. Open the thermostat front panel door.
2. Press the **fan** button on the left side. The fan on or fan auto will appear in the lower left corner of the display.
3. Press the **fan** button again to change setting.
4. Close thermostat door.

Auto Changeover — The thermostat displays one of five modes: heat, cool, Em heat, heat cool (auto mode) and off. When the mode selection is in auto mode, the system is allowed to switch from heating to cooling or from cooling to heating to maintain the temperature set points.

Unlocking the Keypad — The thermostat is locked when the padlock symbol is shown on the thermostat display. A locked thermostat will inhibit a user from making adjustments.

The method by which the thermostat is unlocked is configured by the installer. Three unlocking options are available:

1. The user must simultaneously depress the **up** and **down** buttons for 5 seconds.
2. If a set of dashes are displayed, then a four-digit pass code must be entered by the user.
3. The user must simultaneously depress the **up** and **down** buttons for 5 seconds, and then enter a four-digit pass code.

Auxiliary Heat — This option is available for all of the equipment types except cool only. When the auxiliary heat is active "aux heat" will be displayed and the supplemental heat is used to meet the demand in the space. The heater will turn on automatically.

Using Emergency Heat — Emergency heat is used when the heat system cannot keep up with demand. If the heat pump compressor that works with auxiliary heat fails, or if the heat pump is not working at all, the emergency heat can be used. To set the thermostat to use emergency heat, perform the following procedure:

1. Open the thermostat front panel door.
2. Press the **mode** button until the display shows Em Heat in the upper left corner of the display.
3. Close the thermostat door.

Smart Recovery — The Smart Recovery feature transitions the space from one temperature period (P1 - P4) to the next so that the space temperature matches the temperature set point at the start of each time period. This means, for example, that if the occupied period temperature setting is lower than the period that precedes it, then the thermostat will start cooling down the space before the beginning of the scheduled period. The thermostat does this at an energy efficient rate. This not only helps make the space as comfortable as possible, it also makes thermostat usage more effective.

Power Outage — If the building loses electricity, the thermostat will not need to be reprogrammed. The settings are retained in memory.

TROUBLESHOOTING

There are system error messages that may appear on the thermostat screen. See text below for possible system error messages and their meaning.

Space Temperature Sensor Failure — If the space sensor reads less than -50 F or greater than 150 F for 60 consecutive seconds, the sensor is considered failed.

If the sensor has failed, the O/B, Y2, Y1 and W outputs turn off and the space temperature display will show "- -". The fan will continue to run if the user has set the fan selection to "fan on."

If the space temperature is the average of both the local and remote sensors and one of the sensors fails, the thermostat will control the valid sensor only. The display will alternate every 10 seconds between "- -" for the invalid sensor and the reading from the valid sensor.

E7 Error — If the thermostat is configured for continuous fan and the **fan** button is pressed, an E7 error code will be displayed indicating that the fan speed can not be adjusted.

Five-Minute Compressor Timeguard — This timer prevents the compressor from starting unless it has been off for 5 minutes. It can be defeated for one cycle by simultaneously pressing the **fan** and **up** keys. The indication of a flashing **heat** or **cool** icon means that there is a demand in the space but the equipment is being held off due to the timeguard timer.

Changing Batteries — The thermostat can be powered by the HVAC equipment or by battery power. If there is no lighting until a button is pressed, it is battery powered. When the thermostat uses electricity, the batteries (if installed) take over if the electricity goes out.

When powered by batteries, the thermostat's two AA batteries should last about one year. When the batteries have lost about one-third of their power, a **battery** icon shows up on the display in the upper right corner with two black bars. If two-thirds of battery power is lost, the battery icon will display one black bar. As the batteries get weaker, the icon goes down to one bar and then none. When the battery icon is less than full, backlight function is lost. When the batteries are completely dead, the thermostat will be unusable.

It is recommended that the batteries be replaced at the one bar level with two AA alkaline batteries. Batteries are located in the back of the thermostat, so the thermostat will have to be removed from the wall. To replace the batteries, perform the following procedure:

1. Locate the latch at the top of the thermostat. The latch is located at the center of the top rim.
2. Press the latch down. This will disconnect the thermostat from the top of the wall plate.

NOTE: The HVAC equipment will shut down.

3. Remove the thermostat from the wall bracket completely by moving it slightly toward you and lifting it up and off the lip on the lower edge of the wall bracket.
4. Set the thermostat face down on a flat surface. The batteries are located in the lower right corner.
5. Remove and recycle the old batteries.
6. Install new batteries.
7. Replace the thermostat on the wall bracket by lining up the two slots on the bottom edge of the back of the thermostat with the two lips on the wall bracket.
8. The HVAC equipment will start back up based upon the previous configuration settings.

