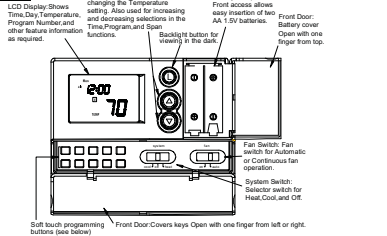


Program Thermostat Owners Manual

Model : CP1820



We are pleased you have selected one of our broad line of wall thermostat. Our products are manufactured to high quality standards and are designed for years of service.

Read This Before Installing Thermostat OPERATION

1, Your Thermostat is designed to operate with most gas, oil, electric or 2-wire hot water heating, and air conditioning systems that have 24-volt or millivolt control. This Thermostat will not control multistage heating or cooling systems, 110 / 220V systems, or 3 wire zone systems.

IMPORTANT

2, Read the entire installation of this Owner's Manual thoroughly before you begin to install or operate your Thermostat.

Remove the mylar label from the display window.

INSTALLATION

3, All installation is normally performed at your thermostat.

PROGRAMMING

4, You can practice programming before installing your thermostat by inserting and connecting the batteries. This can be done while you relax in your favorite chair and is a very good way to familiarize yourself with all the functions of your Thermostat.

COMPRESSOR PROTECTION

5, The thermostat provides a 4-minute delay after shutting off the compressor before it can be restarted. This feature will prevent damage to your air conditioner compressor caused by rapid cycling. It does not provide a delay when there are power outages.

TEMPERATURE RANGE

6, This thermostat can be programmed between 45°F and 95°F (7°C and 35°C). However, it will display room temperatures from 30°F to 99°F (0°C and 37°C). "H" will be displayed if the temperature is higher than 99°F (37°C), and "L" will be displayed if the temperature is lower than 30°F (0°C).

This thermostat will automatically cutoff in Heat mode if the temperature rises above 95°F (35°C), and automatically cutoff in Cool mode if the temperature drops below 45°F (7°C).

POWER FAILURE

7, Whenever the main power is interrupted or fails, the battery power retains the programs and current time.

BATTERY WARNING

8, Two fresh AA alkaline batteries should provide well about one year of service. However, when the batteries become drained, the "BATT" will flash on the display. When this message occurs, install new alkaline batteries. You have approximately 1 minute to change the batteries and keep the thermostat's clock and program settings. Once the batteries have become too low to ensure proper operation, your system will be turned off, and the display will be cleared except for flashing "BATT" on the LCD display.

CAUTION: When only the Low Battery icon flashes on the display, the thermostat is shut down, and your system will no longer operate. In this condition, there is no temperature control of your dwelling.

NOTE: The backlight will not function when the thermostat is in low battery condition.

NOTE: If you plan to be away from the premises over 30 days, we recommend that you replace the old batteries with new alkaline batteries prior to leaving.

POWER SUPPLY

9, The thermostat shall be powered by 24 VAC and with batteries as backup.

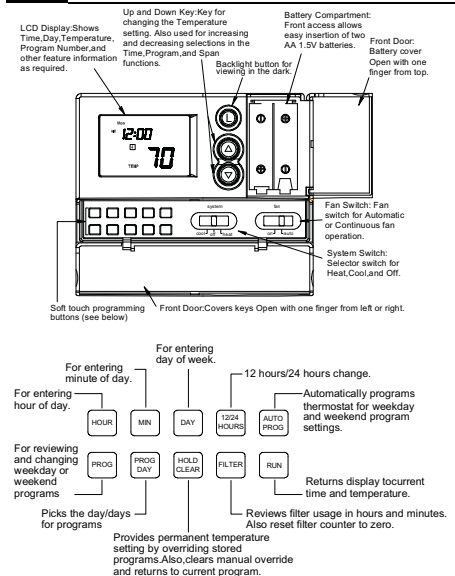
How This Thermostat Works - And Saves Your Money

This thermostat is designed to optimize the use of your heating and cooling equipment. It does this by matching your comfort (the temperatures in your home) to your schedule.

An example:

- 6:00am - You wake up. Program 1 has the heat set to 70°(21°C).
- 7:30am - You leave for work. The second program turns the heat back to 62°(17°C) while you are away.
- 5:00pm - You come home. The third program has already warmed your house back to 70°(21°C).
- 10:00pm - You go to bed. A half hour later, program 4 turns the heat back to 64°(18°C) to save energy while you are under the blankets.

FEATURES



Installation

What You Need

This thermostat comes with two #8 slotted screws and two wall anchors for mounting. To install your unit, you should have the following tools and materials.

- Slotted screwdriver
- Electric drill and 3/16" bit
- Hammer
- Two 1.5V(AA) Size Alkaline batteries are included.

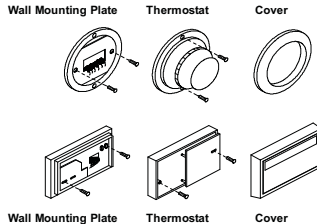
Remove Old Thermostat

CAUTION: Do not remove any wiring from existing thermostat before reading the instructions carefully. Wires must be labeled prior to removal.

- **IMPORTANT!** Turn off the power to the furnace at the main power panel or at the furnace.
 - Remove existing thermostat cover and thermostat. See figure 1. Some thermostat will have screw or other locking devices that must first be removed. Once wall mounting plate is exposed, look for wires.
- If wires are not visible, they may be connected to the back of the wallplate. Again, look for screws, tabs, etc. Some models have doors that open to expose wires and mounting screws. (See Figure 1).

TYPICAL HOME THERMOSTAT

FIGURE 1



Label Wires

- Each wire coming from the wall to the existing thermostat is connected to a terminal point on that thermostat. Each of these terminal points is usually marked with a code letter as shown in Table A.

The number of wires in your system can be as few as two (for heat only systems), as many as eight, or any number in between. If you follow the labeling procedures correctly, you do not have to be concerned about how many wires there are.

There is often no terminal marking on the existing thermostat of two wire, heat only systems. Don't worry, just connect either of the wires to the RH terminal, then connect the other wire to the W terminal to complete the circuit.

- **IMPORTANT! BEFORE DISCONNECTING ANY WIRES, APPLY THE SELF-ADHESIVE LABELS PROVIDED TO THE WIRE AS SHOWN IN TABLE A.** (For example, attach the label marked W to the wire which goes to the W or H terminal on your existing thermostat.) **IGNORE THE COLOR OF THE WIRES** since these do not always comply with the standard.

- After labeling wires, disconnect them from the existing thermostat terminals.
- Remove existing wallplate. To make sure wires do not fall back into wall opening, you may want to tape them to the wall.
- If hole in wall is larger than necessary for wires, seal this hole so that no hot or cold air can enter the back of the thermostat form the wall. This air could cause a false thermostat reading.

Wire Labeling

This table will help

you match the labels to the wires so you can attach them to your thermostat.

NOTE: Follow the labels when connecting wires since many installations do not follow color coding of wires.

AC24V-1 L					
AC24V-2 N					
RH, RH, VIR 4 or 4 24 Volt					
RCV, 24 Volt Cool					
G or F Fan					
Y or M (See Note) Air Conditioning					
W or H Heating					

Wire Labeling

NOTE: If your thermostat has one wire marked R or RH (4-wire system), then leave the jumper wire between the RH and RC terminals. Otherwise, if you have separate RH and RC wires (5-wire system), then remove the jumper wire between the RH and RC terminals.

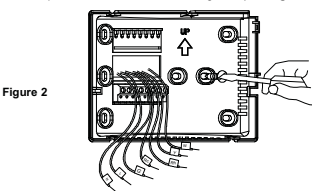
NOTE: Do not connect a "common" wire (sometimes labeled "C") to any terminal on this thermostat. Tape up the wire and do not use. This wire provides electricity to non-battery powered thermostats.

Mount Wallplate and Thermostat

Snap open the wallplate your thermostat by pressing the release tab on the bottom of the thermostat.

Position wallplate on wall and pull existing wires through large opening. Then level for appearance. Mark holes for plastic anchors provided if existing holes do not line up with Hunter Thermostat holes.

Drill holes with 3/16" bit and gently tap anchors into the holes until flush with wall. Reposition wallplate to wall, pulling wires through large opening. Insert mounting screws provided into wall anchor and tighten. (See Figure 2.)



Selector switches

The heating system selector and the "F/C" selector switches are located on the Printed Circuit Board.

Heating system selector

The heating system selector is a switch on the Printed Circuit Board on the inside of the thermostat. The switch is at "HG" position. Leave it in this position if you have a gas furnace or an oil burner.

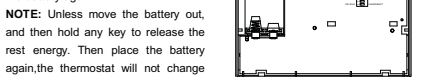
If you have an electric furnace, test to see whether the heat and fan come on as expected. Leave the switch in the "HG" position. If the fan does not come on when the thermostat calls for heat, change the switch position to "HE".

The system selector has no effect in the cooling mode.

NOTE: "HG" position is for gas and most other systems. "HE" position is for certain electric systems having a fan relay.

F/C selector (Fahrenheit/Centigrade)

Your thermostat is set for "F" mode from the factory. In order to change to "C" mode, slide the switch to "C" and move the battery out, and then hold any key to release the rest energy. Then place the battery again. The thermostat will not change the mode.



Auto Recovery select.

Your thermostat is set from the factory with the Auto Recovery Feature enabled, which complies with the EPA ENERGY STAR Program. If you prefer to use normal recovery, slide the switch to the ENABLE position.

Connect Wires and Mount Thermostat Cover to Wall Plate

- Match and connect the labeled wires to the appropriate coded terminal screws on the mounting plate. (See Figure 3, 4.) Ignore any wires which may be present, but which were not connected to the old thermostat.
- Be sure to tighten the terminal screws securely, otherwise a loose wire could cause operational problems with your system or thermostat.
- Push excess wire back into hole to prevent interference with mounting of the thermostat cover.
- Make sure the Function Switch is set at OFF, and the FAN-AUTO Switch is in AUTO.
- Insert the bottom tab on the thermostat body into the slot at the bottom of the wallplate. Press top of the thermostat body to snap it into the wallplate.
- **(NOTE: Do not force the thermostat onto the wallplate, as the terminal pins may be damaged. If it does not snap properly, the thermostat may not work.)**
- Insert the two AA size batteries, observing the polarity marked on the unit.
- The installation is now complete. Continue reading



Figure 3

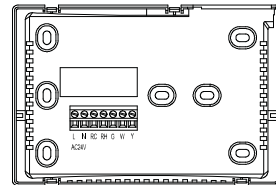


Figure 4

Programming

- 1 Remove mylar label covering display window.
- 2 When the heating or cooling system is actually operating, "HEAT" or "COOL" will appear on the display.
- 3 If power is interrupted the batteries will keep all programs.
- 4 If "BATT" indicator appears on the display replace the batteries.

Setting the Time and Day of Week

When you first install the two AA batteries, the thermostat automatically sets the day and time to Monday, 12:00 a.m. The first data you should enter is the current time and day of work. As the keys are pressed, the display will show the data being entered.

EXAMPLE: If the unit is being Installed at 9:15 p.m. Saturday, to set the thermostat, you would press the keys in the shown sequence.

	■ initial read-out	" 12:00 TEMP 72
	■ Current room temperature is 72°.	
HOUR	■ Press once. Temperature digits disappear, show time set mode.	" 12:00
HOUR	■ Press and hold until current hour appears on display. ■ Note the AM/PM indicator.	" 9:00
MIN	■ Press and hold until current hour appears on display.	" 9:15
DAY	■ Press until current day appears on display.	" 9:15
RUN	■ Returns to normal time and temperature. ■ If Run Key is not pressed it will return automatically in 10 seconds. Figure 4.	" 9:15 TEMP 72

Typical Suggested Summer and Winter Programs for Maximum Savings

Studies conducted by the Department of Energy estimate that setting your thermostat back 10°F for two 8-hour periods during winter can reduce your fuel bill by as much as 33%. By setting your thermostat up 5° for two 8-hour periods during summer you can reduce your fuel bill up to 25%. Your thermostat is capable of holding up to 4 separate programs for each day of the week. You can program all weekdays, Monday to Friday, to the same 4 programs as shown in the table, or each weekday can have a different set of 4 programs. Similarly weekend programs, Saturday and Sunday, can be the same 4 programs or each weekend day can have a different set of 4 programs.

A typical set of programs is shown in Table 3.

The following time and temperature settings are pre-programmed into the thermostat:

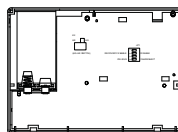
MO TO FR		Temperature in F° (C°)	
Program Number	Time	Heat	Cool
1	6:00 am	68° F(20° C)	78° F(26° C)
2	8:00 am	60° F(16° C)	85° F(29° C)
3	4:00 pm	68° F(20° C)	78° F(25° C)
4	10:00 pm	62° F(16° C)	82° F(27° C)
SA AND SUN		Temperature in F° (C°)	
Program Number	Time	Heat	Cool
1	6:00 am	68° F(20° C)	78° F(25° C)
2	8:00 am	62° F(16° C)	82° F(27° C)
3	4:00 pm	68° F(20° C)	78° F(25° C)
4	10:00 pm	62° F(16° C)	82° F(27° C)

When your program becomes effective at the next time/temperature setting, the appropriate corresponding program number will appear on the display.

Personal Program Schedule

Before programming or changing the program, use this Personal Program Schedule to determine which times and temperature settings will best satisfy both your comfort and energy saving requirements.

Use a pencil so you can revise your records each time you change your temperature settings.



FOR WINTER

NUMBER	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4
MONDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
TUESDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
WEDNESDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
THURSDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
FRIDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
SATURDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
SUNDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP

FOR SUMMER

NUMBER	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4
MONDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
TUESDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
WEDNESDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
THURSDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
FRIDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
SATURDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP
SUNDAY	TIME TEMP	TIME TEMP	TIME TEMP	TIME TEMP

Programming Your Thermostat

Your thermostat can be programmed in two different ways.

1. Auto-program method
 2. Manual method
- Before programming, position the HEAT/OFF/COOL selector to be programmed.

Auto Programming

Our thermostat is pre-programmed guidelines for energy efficiency. Note that it is easier to modify these programs than to programs than to program the thermostat manually.

- Press once. During Auto Programming, the display will change as shown.
- The thermostat will be programmed for all 7 days of the week as shown below.

Program Number	Time	Heat	Standard
1	6:00am	68°F (20°C)	78°F (26°C)
2	8:00am	60°F (16°C)	85°F (29°C)
3	4:00am	68°F (20°C)	78°F (26°C)
4	10:00am	60°F (16°C)	85°F (29°C)

- Refer to Manual Programming entering or changing the programs.

Manual method

In this method, each program is inserted according to your personal programming schedule.

Familiarize yourself with manual programming. The following example demonstrates the manual programming method. You can program or change the program of weekdays, weekends, or individual days.

NOTE: 1) The program time is set in increments of 15 minutes.

2) The program temperature is set in increments of 1°F.

3) When setting PM time, make sure the "PM" indicator appears on the display.

Weekday Programs

Press **Display Reads**

- Normal display of time, temperature, and day of the week.

Step 1 **Display Reads**

- Selects days Mon to Fri for same set of 4 programs each day.

Step 2 **Display Reads**

- Program indicator(1) is displayed.
- 68°F is displayed.
- Mon to Fri is displayed.

Step 3 **Display Reads**

- Press and hold until 6:00 is displayed.
- Note AM/PM

Step 4 **Display Reads**

- Press once to change temperature to 69°F.
- Weekday program 1 is complete.
- Press PROG to move to program 2, 3, and 4 and follow the same steps.

Use to insert or change time and temperature of other programs.

Display Reads

- Selects weekend days Sat, Sun for same set of 4 programs each weekend day.
- Follow steps 2-4 to enter programs.

Similar to weekday programming.



to insert weekend programs.

Individual Day Programming

To program for each individual day separately by a different set of programs, first select day by displaying the day of program, then insert the desired times and temperatures.

Press **Display Reads**

- Mon to Fri are selected. Mon to Fri will have Same programs.

Display Reads

- Sat to Sun will have Same programs.

Display Reads

- Mon is selected, program for Mon only.

Use to enter programs for Monday.

Similarly Tue to Sun can be selected.

Display the day to be programmed and use to enter programs.

NOTE: Another approach to programming is to first program all weekdays Mon through Fri and Sat and Sun as same programs. Then, display and change the programs of only those days which will have different programs.

Reviewing Programs

You may want to review the programs to see that the settings are compatible with your lifestyle.

- Normal display of current time, day of week temperature, and day of week.



- 1st weekday program is displayed.
- Program indicator(1) appears.
- Mon to Fri indication appears.



- Continue pressing to view each day.

- Continue pressing to view each period.

If you are armchair programming the thermostat, before you mount the face of the thermostat, turn the system selector to the OFF position.

Temporary Manual Override

To temporarily change the current set temperature without affecting your program:

Press and to change to your desired new temperature.

- Press to RUN to normal mode, or wait 15 seconds for it to return automatically.
- The current program number will flash to signify the Temporary Override. At the next program change, the Temporary Override, and the next program temperature becomes the set point temperature.
- To end the Temporary Manual Override:
 - Press and wait for HOLD to display on the lcd.
 - Press HOLD key. This will return the set temperature to the current program set temperature.

Permanent Override or a Designated Day Override

To hold your Manual Override for vacation or Until a Designated Day

- Press to make the current program temperature the HOLD temperature. HOLD will be displayed on the LCD, and the Program number will disappear.
- Follow the Temporary Manual Override instructions above to change the Permanent Manual Override temperature.
- You can confirm the held set temperature by pressing for less than 1 second.
- Press again. Hold day will be displayed on the lcd and the clock will disappear
- Press Day key to add override days.
- Press Hour key to reduce override days
- Follow the Temporary a Designated Day Override instructions above to change the Permanent Manual

Override temperature.

To end Override:

Under Permanent Override Press hold/return key twice. Under a Designated Day Override press the hold once. The thermostat will return to the current program, and the HOLD display will be canceled.

Other Features

12Hr./24 Hr. Time Format

Your thermostat is set from the factory in normal 12 (AM/PM) time format. To change to

24 hour (military) time, press during time and day setting mode to toggle between the 12 hour and 24 hour formats. The AM / PM indicator will not be displayed in 24 hour mode. Both the current time and all programs will automatically change to the selected format.

Backlighting

Your thermostat has an electroluminescent lamp that backlights the display for easy viewing in the dark.

When any key is pressed the display is illuminated.

The display will remain illuminated for 8 seconds after the last key is pressed. This allows the light to stay on if you need to operate several keys.

Note: If the thermostat is in Low Battery warning condition, the backlight will not operate. Replace with 2 new AA alkaline batteries to restore the Backlight function.

Filter Monitor

Your thermostat also keeps a record of the number of hours your filter has been in use. To maximize your system's performance and energy efficiency, change or clear your filter regularly.

When the total system run time for heat and cool reaches 400 hours, you need clean or change your system's filter, "FILT" will continue to flash until the counter is set back to zero.

- Press to review total filter usage. The display will blink "FILT" Then show the filter Monitor counter. After 15 seconds, the display will return to normal mode, or you can hit RUN to exit immediately.

The Filter Monitor will display up to 999 hours and 59 minutes of usage. In this example, the counter is at 410 Hours, 26 minutes.

- To reset the Filter Monitor counter, depress FILTER for 3 seconds. The display will blink, and The counter will be reset to zero.

Auto Recovery

Auto Recovery calculates how early to turn your system back on, so that the room temperature is already comfortable by the start of the comfort temperature program period. Auto Recovery work's in both Heat and Cool modes.

- When the thermostat is in Auto Recovery mode, the display will alternate "RECO" with time, and the program indicator will flash.

■ Auto Recovery can be disabled by sliding the Recovery switch on the circuit board to disable.

- Auto Recovery will not operate if Permanent hold or Temporary hold is in operation.
- Auto Recovery can be canceled manually if HOLD is pressed during the recovery process.

- Auto Recovery will be canceled and change to next period.

Details of Auto Recovery Operation:

- Auto Recovery can be disabled by sliding the Recovery switch on the circuit board to this position.
- Auto Recovery will not operate if Permanent hold or Temporary hold is in operation.
- Auto Recovery can be canceled manually if HOLD is pressed during the recovery process. If a recovery process is canceled manually then the recovery process will not start again until the next program period starts (an exception is that if time or program is changed then the thermostat will check Auto Recovery conditions immediately).

Error Mode

If the thermostat is unable to control your system due to an unexpected battery problem, the thermostat will enter Error Mode. In this condition, the thermostat flashes "E1" or "E2" on the LCD display, and shuts off your system. To correct this problem, replace the batteries with 2 new AA alkaline batteries, even if you have recently replaced them. Move the battery out hold any key then place the battery again. You will need to reprogram your thermostat and confirm normal operation.

Lcd display	Information	Lcd display	Information
E1	Sensor Error	E2	System switch

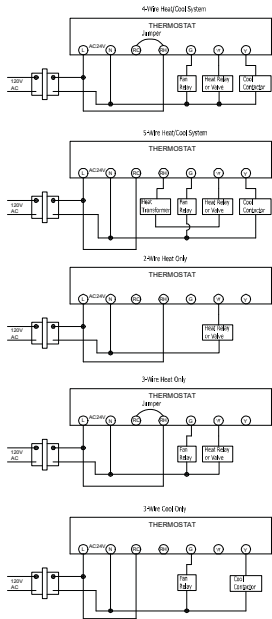
Low Battery Warning

Your thermostat has a two-stage lower battery warning system. When the batteries are first detected to be weak, the first stage low battery warning is indicated by "BATT" flashing on the LCD display. At your earliest convenience, you need to replace the batteries with 2 new AA alkaline batteries.

When the batteries become too weak for normal operation, the thermostat enters the second stage low battery warning which shuts down the thermostat. In this condition, "BATT" flashes alone on the display, and the thermostat will turn your system Off. Your system will remain shut-off until the batteries are replaced.

NOTE: The thermostat will still keep the current Set Temperature and Filter run time in memory until new batteries are installed. After confirming that new batteries have been inserted, the thermostat will return to normal operation.

Wiring Diagrams



Troubleshooting

Problem	Solution
SCRAMBLED OR DOUBLE DISPLAY 1. Remove clear mylar sticker. (numbers over numbers)	
NO DISPLAY	1.Check battery connections and batteries. 2.Move the battery out, and then hold any key to release the rest energy. Then place the battery again.
ENTIRE DISPLAY DIMS	1.Replace batteries.
PROGRAM DOES NOT CHANGE AT YOUR DESIRED SETTING	1.Check that time is set properly to "AM" or "PM" 2.Check that thermostat is not in "HOLD" mode. 3.Check for correct day setting.
AUTO/FAN DOES NOT COME ON	1.Move HG/HE system selector to opposite Position.
HEATING OR COOLING DOES NOT GO ON OR OFF	1.Check that function switch is in correct position ("HEAT" or "COOL"). 2.There may be as much as 20 seconds delay before the system turns on – wait and check . 3.Check your circuit breaks and switches to ensure there is power to the system. 4.Replace batteries. 5.Make sure your furnace blower door is closed properly. 6.If your system only uses 4-wires, be sure the jumper wire is installed between the RC and RH terminals.
ERRATIC DISPLAY	1.Move the battery out, and then hold any key to release the rest energy. Then place the battery again.
IF UNIT CONTINUES TO OPERATE IN OFF POSITION	1.Replace unit.
THERMOSTAT PERMANENTLY READS "HI", "LO", OR "E1", "E2".	1.Replace unit.

If you experience any other problems, call us for technical assistance. The service number is 1-866-591-9898