

T8001F, T8024F Flush Mount Programmable Thermostat

INSTALLATION INSTRUCTIONS

APPLICATION

The T8001F Thermostat provides single-stage, programmable temperature control for 24 Vac heating-cooling systems with manual changeover from heat to cool. The T8024F Thermostat provides multistage electronic control of single-zone heating and cooling systems. Heating cycle rate is selectable at 1, 3, 4, 5, 6, 9, or 12 cph. Cooling cycle rate is fixed at 3 cph. Temperature indication can be set for °F or °C.

The T8001F, T8024F Thermostat is powered directly from the system transformer. Batteries are not required because setpoints are held permanently by non-volatile memory.

The T8001F, T8024F model includes a thermostat, wallplate and owner's guide. See Table 1.



MERCURY NOTICE

If this control is replacing a control that contains mercury in a sealed tube, do not place your old control in the trash. Dispose of it properly.

Contact your local waste management authority for instructions regarding recycling and the proper disposal of the control.

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.

3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION

Hazardous Voltage.

Can damage heating/cooling system.

Disconnect power at furnace or main breaker/fuse box.

Location

Install the thermostat about 5 ft (1.5m) above the floor in an area with good air circulation at average temperature. See Fig. 1. Do not install the thermostat where it can be affected by:

- drafts or dead spots behind doors and in corners.
- hot or cold air from ducts.
- radiant heat from the sun or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas such as an outside wall behind the thermostat.

Installing Wallplate in Wall

IMPORTANT

Level only for appearance. The thermostat functions normally even when not level.

Mount wallplate and the T8001F or T8024F with the wing anchors provided (see Fig. 2) as follows:

1. Place the wallplate template at the desired location on the wall.
2. Trace and cutout the opening.
3. Pull the thermostat wire through the wallplate entrance hole.
4. Fasten the wallplate to the wall using the wing anchors.

Table 1. Thermostat Descriptions.

Model	System	Changeover	System Selection	Fan Selection	Powering Method
T8001F	Heat-Cool	Manual	Cool-Off-Heat	Auto-On	Hardwired
T8024F	Heat-Cool	Manual	Cool-Off-Heat	Auto-On	Hardwired



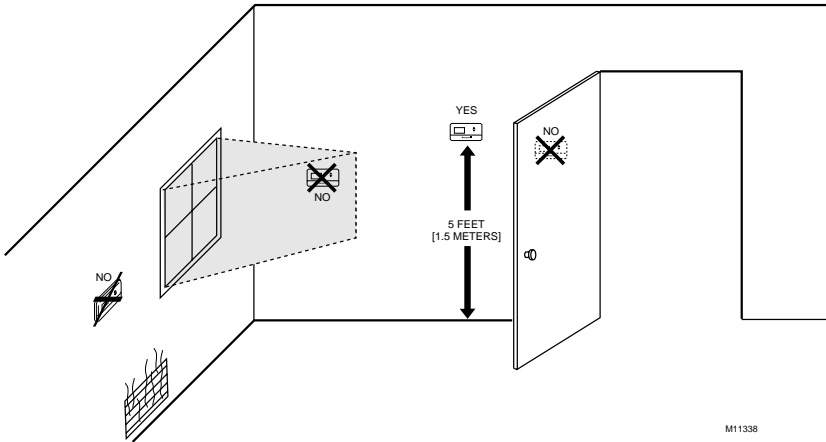


Fig. 1. Typical location of thermostat.

All wiring must comply with local electrical codes and ordinances. Disconnect the power supply to prevent electrical shock or equipment damage.

The shape of the terminals permits insertion of straight or wraparound wiring connections; either method is acceptable. A letter code is located near each terminal for identification. See Fig. 3 and 4.

NOTE: To ensure correct mounting of thermostat, restrict all wiring to shaded area in center of terminals. See Fig. 5.

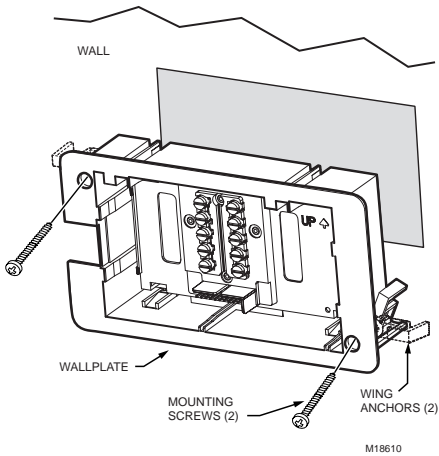


Fig. 2. Mounting wallplate to wall.

Wiring

IMPORTANT

Use an 18-gauge maximum wire for wiring the T8001F Thermostat.

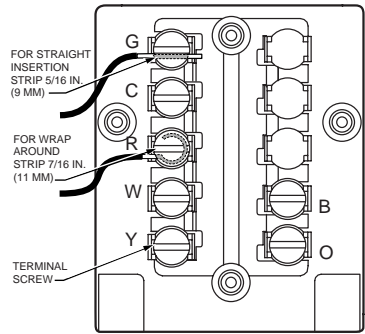


Fig. 3. T8001F wiring connections.

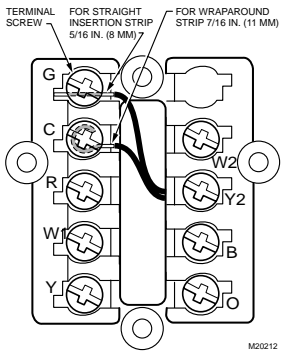


Fig. 4. T8024F wiring connections.

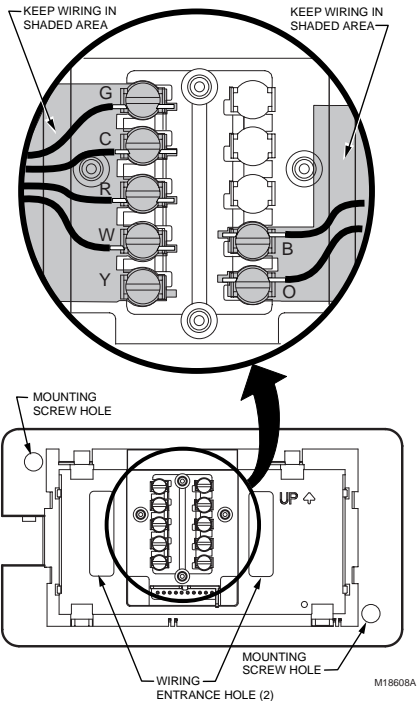


Fig. 5. Restrict wiring to shaded area (T8001 shown).

The T8001F Thermostat is powered directly from the system transformer and is adaptable to most 18 to 30 Vac heating-cooling systems. All T8001F Thermostats require a common wire to supply power. Refer to Fig. 6 through 8 for typical wiring hookups.

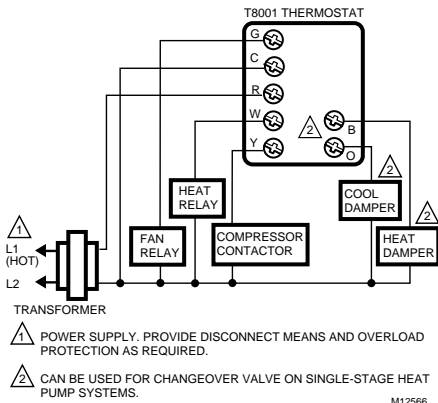


Fig. 6. Typical T8001F hookup in heat-cool system with one transformer.

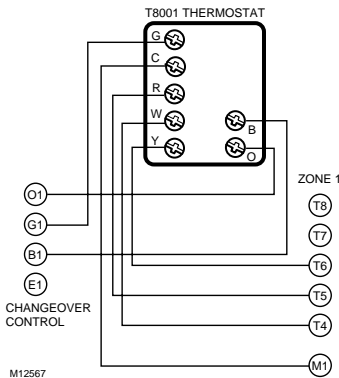


Fig. 7. Typical wiring diagram for T8001F on a zone 1 MABS II or Masterrol™ control panel.

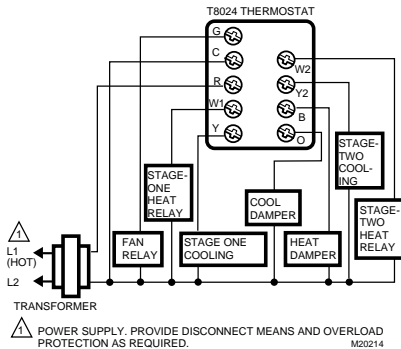


Fig. 8. Typical diagram for T8024F two-stage heat and two-stage cool system with manual changeover.

Setting Fan Operation (Fuel) Switch (T8001F Only)

The fan operation (fuel) switch is preset at the factory in the F position. See Fig. 9. This is the correct setting for most systems. If this system is an electric heat system, set the switch to the E position. The E setting allows the fan to turn on immediately with the heating or cooling equipment in a system where the G terminal is connected.

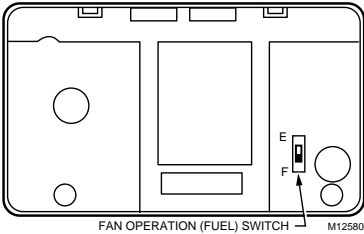


Fig. 9. Fan operation (fuel) switch.

Mounting Thermostat to Wallplate

1. Slide SYSTEM switch to the Off position.
2. Slide the thermostat straight into the wallplate until it is flush against the wall. See Fig. 10.

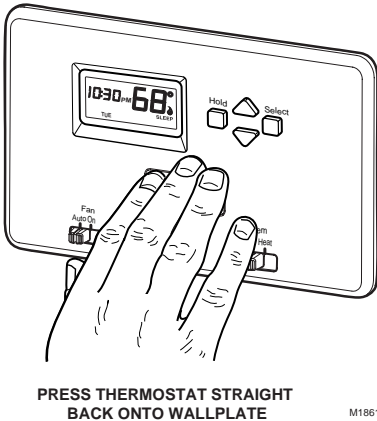


Fig. 10. Mounting thermostat to wallplate.

INSTALLER SETUP

Setting °F/°C Indication and Heat Cycle Rate

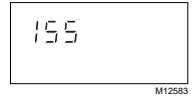
The following instructions provide the information necessary to change the heating cycle rate to match the heating equipment and to choose either Fahrenheit (°F) or Celsius (°C) display.

NOTE: All four steps must be completed to save changes to the °F/°C indication and the heat cycle rate.

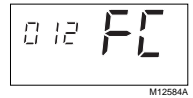
1. Enter Installer Setup.
 - a. Use ▲ or ▼ keys to set the temperature set-point to 52°F (11°C).



- b. Press the ▲ and ▼ keys simultaneously for more than two seconds to enter installer setup.
- c. When released, the three-digit software revision code is displayed.



- d. Press the ▲ key. Factory configuration (FC) is displayed. (A typical example is shown, but information displayed varies by model. This information is for factory use only).



Optional System Checkout

When in steps 1c and 1d only, pressing the ▼ key can be used to turn heat or cool outputs on and off. Change the SYSTEM switch setting to test heat or cool outputs. No action takes place if the system switch is in the Off position.

Examples:

- System setting at HEAT: If heat is on, pressing the ▼ key turns it off; if heat is off, pressing the ▼ key turns it on.
- System setting at COOL: If cool is on, pressing the ▼ key turns it off; if cool is off, pressing the ▼ key turns it on. The 5 minute minimum off time is bypassed.

NOTE: In installer setup only, each press of the ▲ key momentarily displays 1. Each press of the ▼ key momentarily displays 2. When the keys are released, these one-digit codes are no longer displayed.

2. Setting °C or °F.
 - a. Press the ▲ key again to display the current setting.

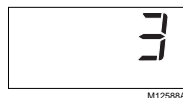


- b. Press the ▼ key to change the °C or °F indication.



3. Setting Number of Cool/Heat Stages (T8024F Only).

a. Press ▲ to display number of cool stages.



b. Press ▼ to change number of cool stages.



c. Press ▲ to display number of heat stages.



c. Press the ▲ key to display control algorithm configuration default.

d. Press the ▲ key again to change control algorithm to C1 or C3.

C1 = Standard control algorithm.
C3 = Aggressive control algorithm (can cause overshooting).

e. Press the ▲ key again. Current configuration (CC) is displayed. A typical example is shown, but CC varies by model. (This information is for factory use only.)



d. Press ▼ to change number of heat stages.



5. Exit Installer Setup.

4. Setting Heat Cycle Rate (see Table 2) for the cycle rate options and equipment.

a. Press the ▲ key to display the current heat cycle rate setting of 1, 3, 4, 5, 6, 9, or 12 cph.



a. Press the ▲ key to save all changes and return to normal operation.

NOTE: If thermostat is set to operate two stages of heat (T8024 only), both stages operate at the selected cycle rate.

b. To change the heat cycle rate, press the ▼ key until your choice of 1, 3, 4, 5, 6, 9, or 12 is displayed. See Table 2.

Table 2. Heating Cycle Rate

System	Cycles Per Hour
Steam, gravity	1
Hydronic heat, condensing gas furnaces ^a	3
Gas or oil forced air	6
Electric heat	9
Special applications ^b	4, 5, 12

^a High efficiency furnace (90+).

^b Refer to the equipment manufacturer's instructions.

OPERATION

Setting FAN and SYSTEM Switches

Fan and system settings are controlled manually by using the switches located at the bottom of the thermostat case. See Fig. 11.

FAN Switch

Fan switch settings are:

On: The fan runs continuously. Use for improved air circulation and air quality.

Auto: Normal setting for most homes. In cooling, the fan starts and stops with the cooling equipment. In heating, the fan is controlled directly by the heating equipment and may start a few minutes after the heating equipment turns on (most systems). When the fan operation (fuel) switch is in the E position, the fan starts and stops with the heating equipment.

Slide the FAN switch in the lower left corner of the thermostat to select the desired fan setting.

SYSTEM Switch

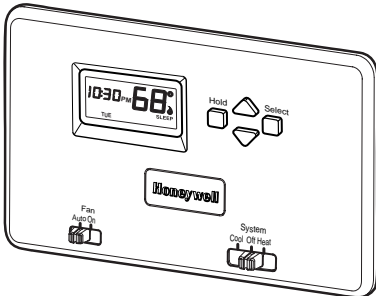
System switch settings control thermostat operation as follows:

Cool: The thermostat controls the cooling system.

Off: Both heating and cooling are off.

Heat: The thermostat controls the heating system.

Slide the SYSTEM switch in the lower right corner of the thermostat to select the desired system setting.

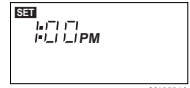


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Fig. 11. Digital Display and System switches.

Setting Current Time and Day

1. To Set Current Time.
 - a. Press Select twice.



M12591A

- b. Press ▲ or ▼ to set current time.



M12592A

2. To Set Day of Week.
 - a. Press Select again.



M12593A

- b. Press ▲ or ▼ to set current day.



M12594A

To use the preprogrammed time and temperature (see Table 3) press Hold to exit the programming mode.

Setting Time and Temperature

The T8001F and T8024F are preprogrammed with the time and temperature settings shown in Table 3. For instructions on programming the thermostat, refer to the Owner's Guide, form no. 69-1464.

Table 3. Preprogrammed Time and Temperature Settings.

Period	Time	Heat Setpoint	Cool Setpoint
Wake	6:00 AM	70°F (21°C)	78°F (26°C)
Leave	8:00 AM	62°F (17°C)	85°F (29°C)
Return	6:00 PM	70°F (21°C)	78°F (26°C)
Sleep	10:00 PM	62°F (17°C)	82°F (28°C)

CHECKOUT

Heating

1. Slide the SYSTEM switch to Heat and the FAN switch to Auto.
2. Press and hold the ▲ key to raise the temperature setting several degrees above the room temperature; the heating equipment should start. In conventional systems, the system turns on the fan through the use of a time delay relay or through a limit control. When the fan operation (fuel) switch is in the E position, the fan starts immediately.
3. Press the ▼ key to lower the temperature setting below the room temperature. Heating equipment should stop.

Cooling



CAUTION

Damage To compressor possible. Operating at too low of an outdoor temperature may cause compressor damage. Do not operate cooling if outdoor temperature is below 50°F (10°C).

Allow compressor to remain off for five minutes before restarting.

Refer to manufacturer's recommendations.

1. Slide the SYSTEM switch to Cool and the FAN switch to Auto.
2. Press the ▼ key to lower the temperature setting several degrees below the room temperature; the cooling equipment should start. The fan starts and stops with the cooling equipment.

NOTE: If unit doesn't start immediately, remember, the thermostat has a built-in minimum off-time of five minutes to protect the compressor.

3. Press the ▲ key to raise the temperature setting above the room temperature. Cooling system should shut down.

Fan

1. Slide the SYSTEM switch to Off and the FAN switch to On. The fan should run continuously.
2. Slide the FAN switch to Auto. In heating, the fan is controlled directly by the heating equipment and may start a few minutes after the heating equipment turns on (on most systems). In cooling, the fan starts and stops with the cooling equipment.

Be sure all equipment responds correctly to the thermostat.

Honeywell

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