

T8624D Chronotherm[®] IV Deluxe Zone Multistage Thermostat

INSTALLATION INSTRUCTIONS

APPLICATION

The T8624D Chronotherm[®] IV Deluxe ZoneMultistage Thermostat provides electronic control of 24 Vac multistage zoned heating and cooling system. Refer to

Table 1 for a general description of the thermostat. The T8624 thermostat requires a common wire to supply power.

Table 1. Description of T8624 Thermostats.

Model	Application	Powering Method	Changeover	System Selection	Fan Selection
T8624D	Zone 1 on MABS II or TotalZone [®] system	Requires common wire to power supply	Automatic or manual	Heat-Off-Cool-Auto	On-Auto



RECYCLING NOTICE

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

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

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 sun or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas such as an outside wall behind the thermostat.

INSTALLATION

When Installing this Product...

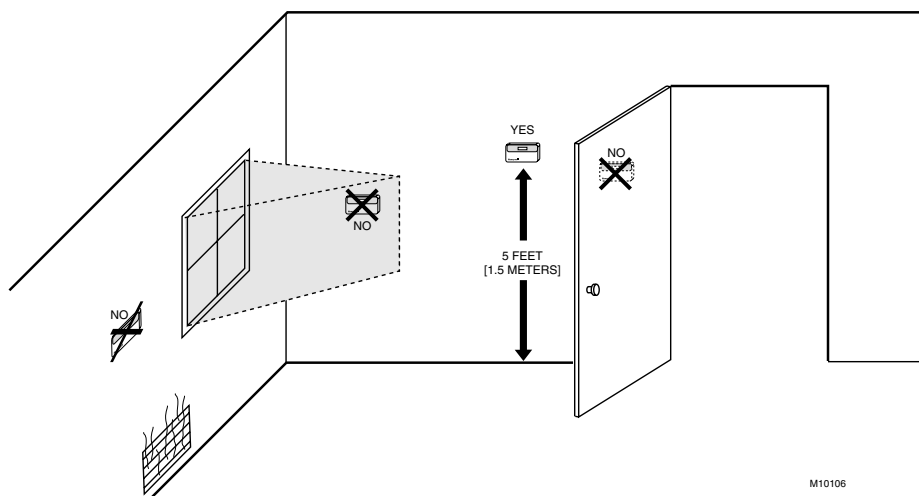
1. Read these instructions carefully. Failure to follow the instructions can damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After completing installation, use these instructions to check out the product operation.

Wallplate Installation

The thermostat can be mounted horizontally on the wall or on a 2 in. x 4 in. wiring box. Position wallplate horizontally on the wall or on a 2 in. x 4 in. wiring box.

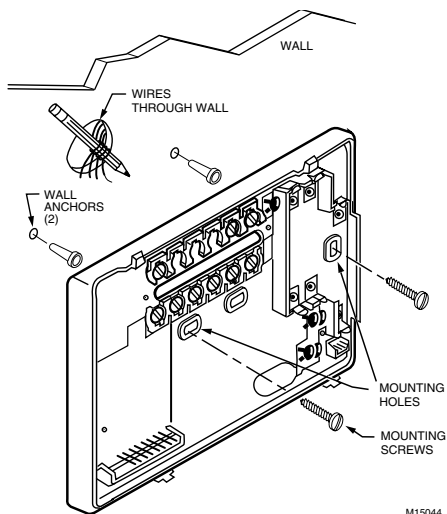
- 1 Position and level the wallplate (for appearance only). The thermostat will function properly even when not level.





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Fig. 1. Typical location of thermostat.



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Fig. 2. Mounting the wallplate.

- 2 Use a pencil to mark the mounting holes. See Fig. 2.
- 3 Remove the wallplate from the wall and drill two 3/16 inch holes in the wall (if drywall) as marked. For firmer material such as plaster, drill two 7/32 inch holes. Gently tap anchors (provided) into the drilled holes until flush with the wall.

- 4 Position the wallplate over the holes, pulling wires through the wiring opening.
- 5 Loosely insert the mounting screws into the holes.
- 6 Tighten mounting screws.

WIRING

All wiring must comply with local electrical codes and ordinances. Refer to Fig. 3 and 4 for typical hookups. A letter code is located near each terminal for identification.



CAUTION

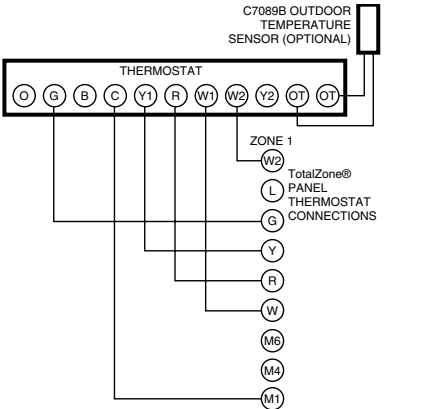
Disconnect power before wiring to prevent electrical shock or equipment damage.

- 1 Loosen the terminal screws on the wallplate and connect the system wires. See Fig. 5.

IMPORTANT

Use 18 gauge, color-coded thermostat cable for proper wiring.

- 2 Securely tighten each terminal screw.
- 3 Push excess wire back into the hole.
- 4 Plug the hole with nonflammable insulation to prevent drafts from affecting the thermostat.



NOTE: WHEN USING W2 ON THE THERMOSTAT TO CONTROL THE SECOND STAGE OF HEATING, MAKE SURE THE STAGE JUMPER IS IN PLACE, ON THE TZ PANEL M11418

Fig. 3. Typical wiring diagram for T8624 on zone 1 TotalZone® control panel.

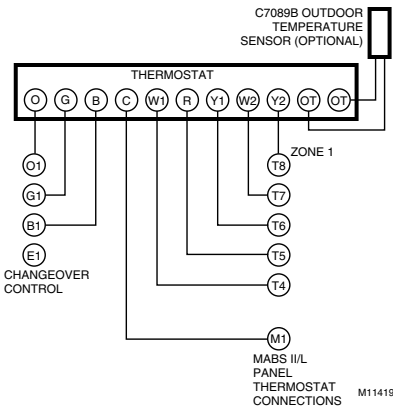


Fig. 4. Typical wiring diagram for T8624D on zone 1 MABS II control panel.

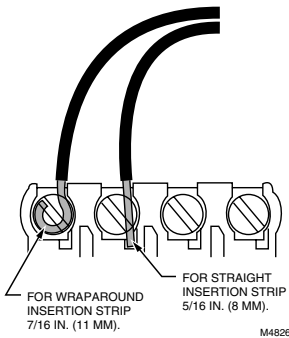


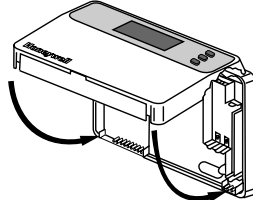
Fig. 5. Proper wiring technique.

Mounting Thermostat

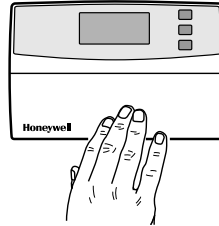
- 1 Engage tabs at the top of the thermostat and wallplate. See Fig. 6. Be sure to align the subbase pins to avoid damage to the thermostat.
- 2 Press lower edge of case to close and latch.

NOTE: To remove the thermostat from the wall, first pull out at the bottom of the thermostat; remove top last.

A. ENGAGE TABS AT TOP OF THERMOSTAT AND WALLPLATE.



B. PRESS LOWER EDGE OF CASE TO LATCH.



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Fig. 6. Mounting thermostat on wallplate.

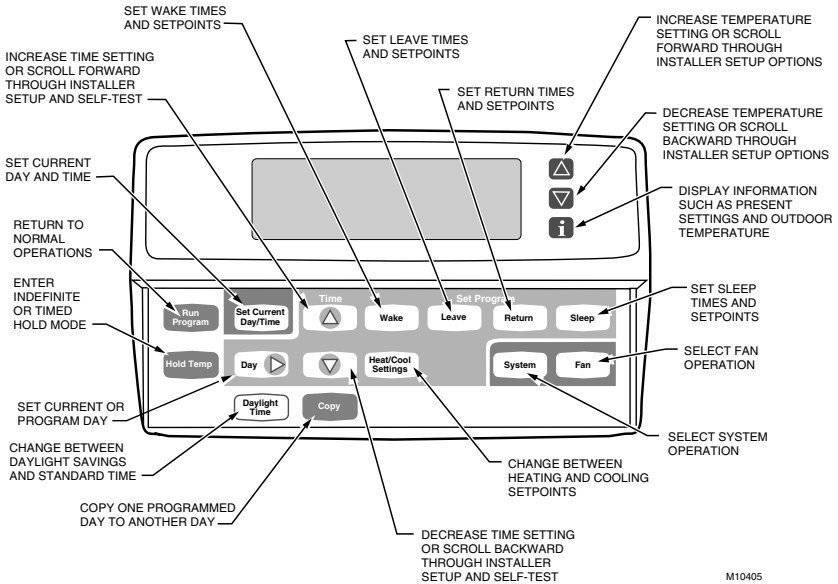


Fig. 7. T8624D key locations and descriptions.

Using Thermostat Keys

The thermostat keys are used to:

- set current day and time,
- program times and setpoints for heating and cooling,
- temporarily override program temperatures,
- display present setting,
- configure Installer Setup,
- check Self-Test,
- display outdoor temperature (select models),
- set the system operation,
- set the fan operation.

See Fig. 7 for the location of the keys.

SETTINGS

System and Fan Settings

The system default setting is Heat and the fan default setting is Auto. Use the System and Fan keys to change the settings. See Fig. 8. The fan settings can be set for each program period individually. The system selection is for all the program periods.

System settings control the thermostat operation as follows:

- Heat: The thermostat controls the heating.
- Off: Both the heating and cooling are off.

Cool: The thermostat controls the cooling.

Auto: The thermostat automatically changes between heating and cooling operation, depending on the indoor temperature.

Fan settings control the system fan as follows:

- On: Fan operates continuously.
- Auto: Fan operates with equipment.

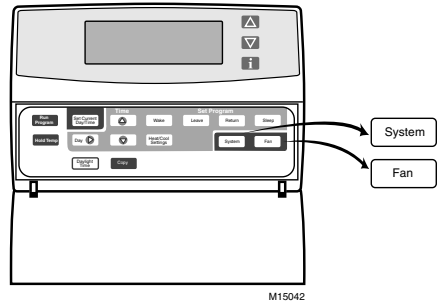


Fig. 8. T8624D System and Fan key locations.

NOTE: Always press the keys with your fingertip or similar blunt tool. Sharp instruments like a pen or pencil point can damage the keyboard.

Temperature Settings

Refer to Table 2 for the default program. If the daytime energy savings period is not used, press the period key (Leave or Return) until the time is blank. The fan setting feature is available on select thermostat models. See Owners Guide, form number 69-1073, for complete instructions on changing the program.

Table 2. Default Program Settings.

Period	Time	Heat Setpoint	Cool Setpoint	Fan Setting
Wake	6:00 AM	70°F (21°C)	78°F (25.5°C)	Auto
Leave	8:00 AM	62°F (16.5°C)	85°F (29.5°C)	Auto
Return	6:00 PM	70°F (21°C)	78°F (25.5°C)	Auto
Sleep	10:00 PM	62°F (16.5°C)	82°F (28°C)	Auto

INSTALLER SETUP

NOTE: For most applications, the thermostat factory-settings will not need to be changed. Review the factory settings in Table 2 and if no changes are necessary, go to the Installer Self-Test section.

The Installer Setup is used to customize the thermostat to specific systems. Some of the options include temperature display, changeover and outdoor temperature display. Installer Setup numbers are listed in Table 3. The table includes all the configuration options and the factory-settings for the T8624.

A combination of key presses are required to use the Installer Setup feature.

- To enter the Installer Setup, press and hold the Information **i** key with the increase **▲** and decrease **▼** keys until the first number is displayed. All display segments appear for approximately three seconds before the number is displayed. See Fig. 9 and 10.

- To advance to the next Installer Setup, press the Time **△** key.
- To change a setting, use the increase **▲** or decrease **▼** key.
- To scroll the Installer Setup numbers backwards, press the Time **▽** key.
- To exit the Installer Setup, press Run Program.



Fig. 9. Display of all the segments of the LCD.

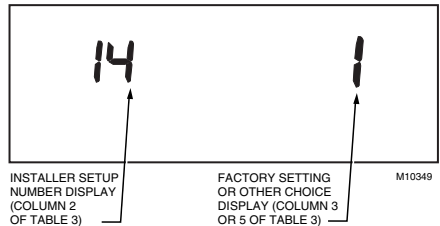


Fig. 10. Display of Installer Setup number and setting.

IMPORTANT

Only configurable numbers are shown on the device. Example: If thermostat does not have a system key, Installer Setup Number 12 will not be displayed. Review Table 3 factory-settings and mark any desired changes in the Actual Settings column. When Installer Setup is complete, review the settings to confirm that they match the system.

Table 3. Thermostat Installer Setup Options.

Select	Installer Setup Number (Press Time △ key to change)	Factory-Setting		Other Choices (Press ▲ or ▼ key to change)		Actual Setting
		Display	Description	Display	Description	
Not used	1 thru 4	—	—	—	—	—
Heating cycle rate ^a	5	6	Stage 2	3 or 9	3—3 cph used for steam systems 6—6 cph factory setting for all stages of system 9—9 cph used for electric heat	
Not used	6 thru 11	—	—	—	—	—
System setting adjustment	12	1	Manual changeover	0 or 2	0—Auto changeover 2—Fixed auto changeover	
Adaptive Intelligent Recovery™ control	13	0	Adaptive Intelligent Recovery™ control is activated (system starts early so setpoint is reached by start of program period)	1	Conventional recovery (system starts recovery at programmed time)	
Degree temperature display	14	0	Temperature is displayed in °F	1	Temperature is displayed in °C	
Not used	15	—	—	—	—	—
Clock format	16	0	12-hour clock format	1	24-hour clock format	
Not used	17 and 18	—	—	—	—	—
Extended fan operation in heating	19	0	No extended fan operation after the call for heat ends	1	Fan operation is extended 90 seconds after the call for heat ends.	
Extended fan operation in cooling	20	0	No extended fan operation after the call for cool ends	1	Fan operation is extended 90 seconds after the call for cool ends.	
Not used	21 thru 23	—	—	—	—	—
Outdoor temperature display (models with OT terminals)	24	0	No outdoor temperature is displayed	1	Outdoor temperature is displayed. Needs a C7089B1000 Outdoor Sensor to operate.	
Not used	25 thru 32	—	—	—	—	—

^a The cycle rate for the second stage of heat is adjustable with 6 cph being the factory setting.

(Continued)

Table 3. Thermostat Installer Setup Options (Continued).

Select	Installer Setup Number (Press Time Δ key to change)	Factory-Setting		Other Choices (Press \blacktriangle or \blacktriangledown key to change)		Actual Setting
		Display	Description	Display	Description	
Minimum off time for the compressor	33	5	5 minute minimum off time for the compressor	0 thru 4	Minimum number of minutes (0 thru 5) the compressor will be off between calls for the compressor	
Temperature range stops in heating	34	90	Highest setpoint heating can be set to	40 to 89	Temperature range (1°F increments) heating setpoint can be set to	
Temperature range stops in cooling	35	45	Lowest setpoint cooling can be set to	46 to 99	Temperature range (1°F increments) cooling setpoint can be set to	
Not used	36	—	—	—	—	—
Temperature display adjustment	37	0	No difference in displayed temperature and actual room temperature	1 thru 6	1—Display adjusts to 1°F higher than actual room temperature 2—Display adjusts to 2°F higher than actual room temperature 3—Display adjusts to 3°F higher than actual room temperature 4—Display adjusts to 1°F lower than actual room temperature 5—Display adjusts to 2°F lower than actual room temperature 6—Display adjusts to 3°F lower than actual room temperature	

IMPORTANT

Review the settings to confirm that they match the system. Press Run Program to exit the Installer Setup. The thermostat has saved the Installer Setup changes and initiated a reset in order to operate with the new settings. Be sure to set the current day and time immediately.

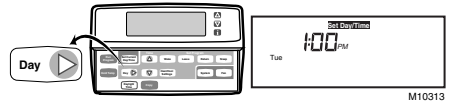
- 2 Press Day until the current day is displayed.

NOTE: Sun=Sunday, Mon=Monday, Tue=Tuesday, Wed=Wednesday, Thu=Thursday, Fri=Friday, Sat=Saturday.

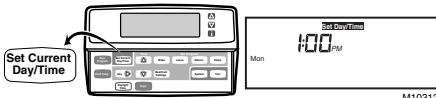
Setting Current Day and Time

- 1 Press Set Current Day/Time.

NOTE: On initial power up or after an extended power loss, 1:00 pm flashes on the display until a key is pressed.



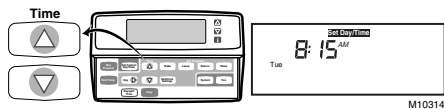
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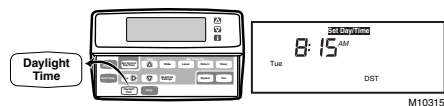
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- 3 Press Time Δ or Time ∇ until the current time is displayed.

NOTE: Tapping the Set Current Day/Time will advance the time in one hour increments.



NOTE: If the current time is Daylight Savings Time, press Daylight Time until DST is displayed.



- 4 Press Run Program.

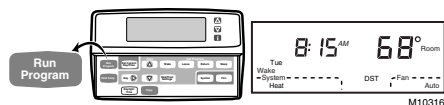


Table 4. Tests Available In The Installer Self-Test.

Test Number	Self-Test Description
10-19	Heating equipment can be turned on and off
30-39	Cooling equipment can be turned on and off
40-49	Fan equipment can be turned on and off
60 0 to 60 19	Keyboard keys test
70-79	Thermostat information including date code and software versions are displayed



Fig. 11. Display of all the segments of the LCD.

INSTALLER SELF-TEST

Use the Installer Self-Test to check the thermostat operation. Refer to Table 4 for a list of the available self-tests.

To start the self-test:

CAUTION

The minimum off time for compressors is bypassed during the Installer Self-Test. Equipment damage can occur if the compressor is cycled too quickly.

Press and hold the increase \blacktriangle and decrease \blacktriangledown keys at the same time until 10 appears. All segments of the display will be displayed before the 10 appears. See Fig. 11 and 12.

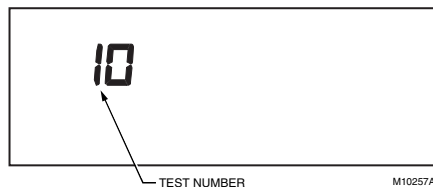


Fig. 12. Display of test number.

Refer to Table 5 for the directions and results of the specific tests.

NOTE: Press Time Δ to advance the next test and Time ∇ to go back to the previous test. Press Run Program to exit the self-test from any test number except 60 series tests.

Table 5. Installer Self-Test Options.

Key to Press	Test Number	Description
Heating Equipment Self-Test		
Time Δ	10	Enter heating equipment self-test.
\blacktriangle	11	Stage-one heat comes on. The system fan is also energized.
\blacktriangle	12	Stage-two heat comes on. Stage-one heat and system fan remain on.
\blacktriangledown	11	Stage-two heat turns off.
\blacktriangledown	10	Stage-one heat and system fan turn off.
Cooling Equipment Self-Test		
Time Δ	30	Change from heating to cooling equipment self-test.
\blacktriangle	31	Stage-one cool and system fan come on.
\blacktriangle	32	Stage-two cool comes on. Stage-one cool and system fan remain on.
\blacktriangledown	31	Stage-two cool turns off.
\blacktriangledown	30	Stage-one cool and system fan turn off.
Fan Equipment Self-Test		
Time Δ	40	Change from cooling to fan equipment self-test.
\blacktriangle	41	Fan comes on.
\blacktriangledown	40	Fan turns off.
Key Operation Self-Test		
Time Δ	60 2	Change from fan to key operation self-test.

NOTE: Press any key and the displayed numbers will change. Press Time \blacktriangledown to go to the previous test and Time Δ to go to the next test. The Run Program Key will not exit this test. Press Time Δ or Time \blacktriangledown and then the Run Program Key to exit.

THERMOSTAT INFORMATION

- 1 Press the Time Δ key to access the thermostat information.



- 2 Press the increase \blacktriangle key to display the production date code. The first two large digits are the month and the third digit is the last digit of the year (Example: 027=February 1997).



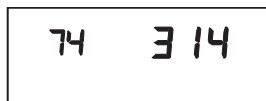
- 3 Press the increase \blacktriangle key again to display the software identification code. (Example: 02 = software ID code 2)



- 4 Press the increase \blacktriangle key again to display the software revision number (Example: 001=Revision number 1).



- 5 Press the increase \blacktriangle key again to display the EEPROM identification code. (Example: 314 = EEPROM ID 314)



- 6 Press the Run Program key to exit the self-test. The self-test times out after four minutes without any key presses.

CHECKOUT

Outdoor Temperature Sensor (select models)

Allow the outdoor temperature sensor to soak in the outdoor air for a minimum of five minutes before taking a reading.

TROUBLESHOOTING GUIDE

Symptom	Possible Cause	Action
Display will not come on.	Thermostat is not being powered.	<ul style="list-style-type: none"> • Check for 24 Vac between R and C terminals. <ul style="list-style-type: none"> — If missing 24 Vac: <ul style="list-style-type: none"> — check if the circuit breaker is tripped—reset the circuit breaker. — check if the system fuse is blown—replace the fuse. — check if the power switch on the HVAC equipment is in the Off position—set to the On position. — check wiring between thermostat and zone control panel—replace any broken wires and tighten any loose connections. — If 24 Vac is present, proceed with troubleshooting.
	Thermostat is not fully connected to wallplate.	Verify that thermostat is correctly positioned and securely latched to wallplate.
Temperature display is incorrect.	Room temperature display has been reconfigured.	Enter Installer Setup number 37 and reconfigure the display.
	Thermostat is configured for °F or °C display.	Enter Installer Setup number 14 and reconfigure the display.
	Bad thermostat location.	Relocate the thermostat.

(Continued)

Troubleshooting Guide (Continued).

Symptom	Possible Cause	Action
Temperature settings will not change. (Example: Cannot set the heating higher or the cooling lower.)	The upper or lower temperature limits were reached.	Check the temperature setpoints: <ul style="list-style-type: none"> • Heating limits are 40 to 90°F (7 to 31°C) • Cooling limits are 45 to 99°F (9 to 37°C).
	The setpoint temperature range stops were configured.	Check Installer Setup numbers 34 and 35 and reconfigure the setpoint stops.
Heating will not come on.	No power to the thermostat.	<ul style="list-style-type: none"> • Check for 24 Vac between R and C terminals. <ul style="list-style-type: none"> — If missing 24 Vac: <ul style="list-style-type: none"> — check if the circuit breaker is tripped—reset the circuit breaker. — check if the system fuse is blown—replace the fuse. — check if the power switch on the HVAC equipment is in the Off position—set to the On position. — check wiring between thermostat and zone control panel—replace any broken wires and tighten any loose connections. — If 24 Vac is present, proceed with troubleshooting.
Heating will not come on.	Thermostat minimum off time is activated.	Wait up to five minutes for the system to respond.
	System selection is not set to Heat.	Set system selection to Heat.
	Heating setpoint is below room temperature.	Check heating setpoint. Set heating setpoint to desired temperature.
Cooling will not come on.	No power to the thermostat.	<ul style="list-style-type: none"> • Check for 24 Vac between R and C. <ul style="list-style-type: none"> — If missing 24 Vac: <ul style="list-style-type: none"> — check if the circuit breaker is tripped—reset the circuit breaker. — check if the system fuse is blown—replace the fuse. — check if the power switch on the HVAC equipment is in the Off position—set to the On position. — check wiring between thermostat and zone control panel—replace any broken wires and tighten any loose connections. — If 24 Vac is present, proceed with troubleshooting.
	Thermostat minimum off time is activated.	<ul style="list-style-type: none"> • Wait up to five minutes for the system to respond. • Enter Installer Setup number 33. Reconfigure minimum off time (if required).
	System selection is not set to Cool.	Set system selection to Cool.
	Cool setpoint is above room temperature.	Check cooling setpoint. Set cooling setpoint to desired temperature.
System on indicator (flame=heat, snowflake=cool) is displayed, but no warm or cool air is coming from the registers.	Heating or cooling equipment is not operating.	Verify operation of heating or cooling equipment in self-test.
Outdoor temperature not displayed ^a	Option not activated.	Enter Installer Setup number 24 and set to 1. Thermostat must have OT terminals and a C7089B1000 installed.
Outdoor temperature display is incorrect ^a	Outdoor sensor is connected incorrectly.	Refer to C7089B1000 installation instructions and check wiring between the thermostat and sensor.
	Wrong sensor.	Replace sensor with C7089B1000 sensor.

^a Select models.

Honeywell

TROLA^ATEMP

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