ZEN ECOSYSTEMS™

Tech Tip: Heating Remains ON

Audience

Professional Installers and Support Agents

Summary

This behavior can be identified by checking if the heat remains on while the Zen Thermostat is in OFF mode. This behavior can occur when the Zen Thermostat system code selected begins with a 3 or 8, and ends with either M, N, O or P indicating a heatpump HVAC system when the HVAC system is of a different type. This is caused by the W1-O/B wire being energized for the reversing valve to be in cooling mode when active. This behavior can be corrected by changing the system code to match the HVAC system type.

Problem Identification

The expected scenario is that the customer has called support or the installer is on site and stated that the heating remains ON when the expected behavior is that it should be OFF.

The support person or installer is to perform testing to show that the heating is always ON under the following conditions:

High level instruction	Step by step instruction
Set Zen Thermostat mode = HEAT	1. With the Zen Thermostat attached to the wallplate, tap the Zen Thermostat display to enter the menu 2. Scroll left to the HEAT menu and center tap to select 3. Scroll up to adjust the heating setpoint to be at least 5 degrees higher than the current ambient temperature, center tap to select 4. The flame icon will be illuminated Flame icon 5. Within the HVAC safety timeout period, typically 5-10 minutes, the active icon will become illuminated indicating heating is active Active 6. At this point, the HVAC unit will turn on and warm air will start blowing from the vents

Set Zen Thermostat mode = OFF	1. With the Zen Thermostat attached to the wallplate, tap the Zen Thermostat display to enter the menu. 2. Scroll left to the OFF menu 3. Center tap to accept 4. The flame (HEAT) or snowflake (COOL) icons SHOULD NOT be illuminated ⬧ Flame icon ❄ Snowflake icon
After the HVAC safety timeout period, typically 5-10 minutes, the heating/cooling/fan should all be off	1. With the Zen Thermostat attached to the wallplate, tap the Zen Thermostat to view the current mode 2. The active icon SHOULD NOT be illuminated indicating heating/cooling is not active ◯ Active icon 3. After the HVAC safety timeout period, typically 5-10 minutes, the system SHOULD NOT be blowing out air.

At this point the HVAC unit is identified as having heating remain ON when the expected behavior is for the system to be OFF.

The support person or installer is to check if the current system code used on the Zen Thermostat begins with a 3 or 8, and ends with M, N, O or P *(see end of document for more detailed explanation of system code).*

High level instruction	Step by step instruction
Check system code	1. With the Zen Thermostat off the wallplate, tap the Zen Thermostat display to enter the PREFS menu 2. Scroll left to the INFO menu 3. Scroll up to the system code currently selected Example: A system code on a Zen Thermostat 31M

Steps to Resolution

If the Zen Thermostat system code **DOES NOT** begin with 3 or 8 or end in M, N, O, or P, skip to the "Exceptions and Escalations" section.

If the Zen Thermostat system code **DOES** begin with 3 or 8 and end with M, N, O, or P this means the system code selected is for a heatpump but needs to be changed to a system code that corresponds with the correct HVAC system type.

The next step is for the support person or installer to confirm the correct corresponding configuration on the Zen Thermostat by following the online installation guide at www.zenthermostat.com/install/install while keeping close attention to steps 11 through 16.

Steps to confirm expected behavior

After configuration of the Zen Thermostat has been updated, the previous steps should be repeated to confirm the identified heat always ON behavior has been resolved and the HVAC system is functioning as expected - that is in HEAT mode the heating is ON, in COOL mode the cooling is ON, and in OFF mode the system is OFF.

High level instruction	Step by step instruction
Set Zen Thermostat mode = HEAT	1. With the Zen Thermostat attached to the wallplate, tap the Zen Thermostat display to enter the menu 2. Scroll left to the HEAT menu and center tap to select 3. Scroll up to adjust the heating setpoint to be at least 5 degrees higher than the current ambient temperature, center tap to select 4. The flame icon will be illuminated Flame icon 5. Within the HVAC safety timeout period, typically 5-10 minutes, the active icon will become illuminated indicating heating is active Active 6. At this point, the HVAC unit will turn on and warm air will start blowing from the vents
Set thermostat mode = COOL	1. With the Zen Thermostat attached to the wallplate, tap the Zen Thermostat display to enter the menu 2. Scroll left to the COOL menu and center tap to

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	select
	3. Scroll up to adjust the cooling setpoint to be at least 5 degrees lower than the current ambient temperature, center tap to select
	4. The snowflake icon will be illuminated
	❄ Snowflake icon
	5. Within the HVAC safety timeout period, typically 5-10 minutes, the active icon will become illuminated indicating cooling is active
	○ Active
	6. At this point, the HVAC unit will turn on and cold air will start blowing from the vents
Set thermostat mode = OFF	1. Tap the Zen Thermostat to wake the thermostat
	2. Scroll left to the OFF menu and center tap to enter
	3. Within the HVAC safety timeout period, typically 5-10 minutes, the active icon will turn off indicating cooling and heating are not active.
	○ Active
	4. At this point, the HVAC unit will turn off and no air will be blowing from the vents

At this point the HVAC system is identified as functioning correctly - that is in HEAT mode the system blows warm air, in COOL mode the system blows cool air, and in OFF mode the system is off.

If the behavior has not changed from the HVAC unit being identified as having heating remain ON when the expected behavior is for the system to be OFF then continue to exception and escalations.

Exception and Escalations

If the above behavior persists and the items require assistance from support or need to be escalated to Zen support, the service person or installer will collect the following information related to the Zen Thermostat on site.
- Photo of the originally installed thermostat wiring
- Photo of the wiring connected to the wall plate
- Photo of the back of the Zen Thermostat showing the serial number
  - Remove the thermostat from the wall and on the back of the thermostat body the serial number is listed on a sticker at the side of the device

Send the photos to support@zenecosystems.com and continue the escalation with Zen support.

Appendix: Zen Thermostat System Code

The Zen Thermostat online installation guide automatically determines the required system code based on the following items entered by the user:
- Wiring installed at the old thermostat
- Type of heating system

The system code is a 3 digit, alphanumeric code. Each digit represents the heating, cooling, and heatpump/fan options
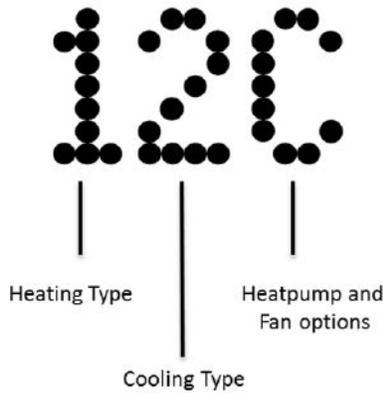
Digit	Heating	Cooling
0	No Heating	No cooling
1	Single Stage, Fuel (Gas or Oil)	Single Stage, Heatpump, Evaporative or Hydronic
2	Single Stage, Electric	Not used
3	Single Stage, Heatpump	Not used
4	Single Stage, Hydronic	Not used
5	Not used	Not used
6	2 Stage, Fuel (Gas or Oil)	2 Stage, Heatpump, Evaporative or Hydronic
7	2 Stage, Electric	Not used
8	2 Stage, Heatpump	Not used
9	2 Stage, Hydronic	2 Stage, Hydronic