

Tech Tip: Heating and Cooling is Reversed

Audience

Professional Installers and Support Agents

Summary

This behavior can be identified by checking the temperature of the air blowing out from the ducts of the HVAC system when the Zen Thermostat is in heating or cooling mode and the expected behavior is reversed (heat mode blows cool air, cool mode blows warm air). This behavior can happen when the Zen Thermostat system code selected ends with either I, J, K, L, M, N, O or P, where the reversing valve is being energized in the wrong mode. This behavior can be corrected by changing the system code to the opposite letter designation for when the reversing valve is energized.

Problem Identification

The expected scenario is that the customer has called support or the installer is on site and stated that in heating or cooling mode and the HVAC system’s expected behavior is reversed (heat mode blows cool air, cool mode blows warm air).

The support person or installer is to perform testing to show that in heating or cooling mode the HVAC system’s expected behavior is reversed (heat mode blows cool air, cool mode blows warm air).

High level instruction	Step by step instruction
Set Zen Thermostat mode = HEAT	<ol style="list-style-type: none"> 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 cool air will start blowing from the vents
Set Zen 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 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 warm air will start blowing from the vents

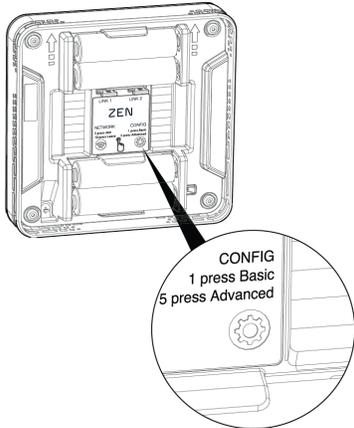
At this point the HVAC unit is identified that in heating or cooling mode and the HVAC system’s expected behavior is reversed (heat mode blows cool air, cool mode blows warm air).

Steps to Resolution

The installer is to change the current system code to the system code with the opposite letter designating when the reversing valve is energized.

Current system code ends with	Change to	New system code ends with
I		M
M		I
J		N
N		J

K	➔	O
O	➔	K
L	➔	P
P	➔	L

High level instruction	Step by step instruction
<p>Change the system code</p>	<ol style="list-style-type: none"> 1. With the Zen Thermostat off the wallplate, press the CONFIG button on the back of the thermostat one time, the screen will show CONF Example: CONFIG button on back of thermostat  <ol style="list-style-type: none"> 2. Tap the center of the display to show the current system code, tap the up or down arrow until the desired system code shows on screen 3. Tap the center of the display to accept the system code 4. Place the thermostat back on the wallplate

Steps to confirm expected behavior

After changing the system code to the code with the opposite letter designating when the reversing valve is energized, the previous steps need to be repeated to confirm the identified heating and cooling reversed 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
<p>Set Zen Thermostat mode = HEAT</p>	<ol style="list-style-type: none"> 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
<p>Set thermostat mode = COOL</p>	<ol style="list-style-type: none"> 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 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 should turn on and cold air will start blowing from the vents
<p>Set thermostat mode = OFF</p>	<ol style="list-style-type: none"> 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 should turn off indicating cooling and heating are not active.  Active 4. At this point, the HVAC unit should turn off and no air should 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 in heating or cooling mode and the HVAC system's expected behavior is reversed (heat mode blows cool air, cool mode blows warm air), 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.