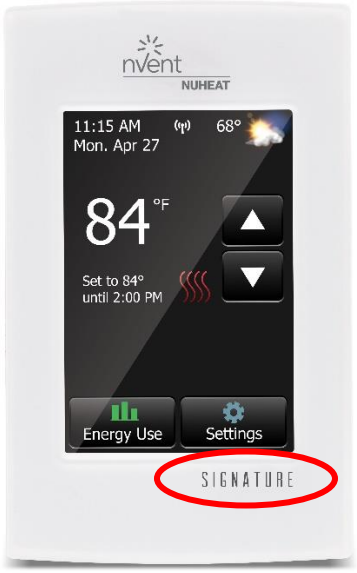
nVent NUHEAT "SIGNATURE" Thermostat – SKU AC0055
THE RED LIGHT IS ON/BLINKING - TROUBLESHOOTING STEPS



Please try the following solutions for the listed causes and see the Steps for Homeowner and Steps for the Electrician instructions below.

Cause	*Solution*
The GFCI Test button has been pressed manually.	When the ***GFCI Test Button*** has been pressed, the screen will display "GFCI Error – Ground fault detected" and the ***RED*** light will be activated. This is normal. Cancel the error message by pressing the Reset Button (on the lower right side of the thermostat) once. This message is supposed to appear each time you press this button as you are testing to ensure that the GFCI safety feature works, much like testing an alarm.
The Ground Fault Circuit Interrupter (GFCI) has been triggered.	Determine the blinking pattern and then see the instructions Steps below. **Solid red light** – press the on/off button to reset the GFCI. If the red light on your unit is located at the TOP or on the RIGHT side of the thermostat and the red light does not turn off, this indicates that there is a ground fault in the heating system. Contact your electrician or installer to verify the wiring and test the system with a digital multimeter.

	Slow blink - Press the on/off button to reset the GFCI. **Fast blink** - This indicates that there is a ground fault in the heating system. Call your electrician or installer to verify the wiring and test the system with a digital multimeter.
The system has not been wired or grounded properly.	The electrician needs to inspect the wiring of the thermostat and mats/cable. Have the electrician see steps below for instructions.

If the causes above do not solve the issue, please follow the instructions below.

Steps for Homeowner:

1. At the thermostat location, press the reset button located on the bottom right side of the thermostat faceplate once to see if the error message and RED light will reset (click here to open the Operating Manual for reference).
    1. If the error message and RED light disappear, set the thermostat to 'Heat' and allow the floor to heat up.
        1. If the floor heats and the error message and RED light do not reappear, continue to operate the system normally.
        2. If the thermostat trips the GFCI as soon as the heating indicators are displayed on the screen, please call your electrician and proceed to electrician troubleshooting (Step 2).
    2. If the error message and RED light do not disappear, turn **OFF** the circuit breaker controlling the floor heating circuit. Leave the breaker **OFF** for 10 Seconds, then turn the breaker back **ON**.
        1. If the thermostat resets and the floor heats up, continue to operate the system normally.
        2. If the thermostat displays the error message and RED light as soon as the power is turned back **ON**, contact an electrician and have them come to the site to perform steps 2 to 6.

Steps for Electrician:

A. Please read and follow the steps noted below.
B. If the issues are not resolved, or if any assistance is required, we recommend that the electrician and homeowner call nVent NUHEAT Tech Support when the electrician is on site so that we can ensure all trouble shooting steps have been conducted properly and explain any next steps.

1. At the breaker panel, turn **OFF** the circuit breaker controlling the floor heating circuit.
    1. Confirm the supply breaker is a standard breaker (not GFCI)
        - If the breaker is a GFCI, replace with a standard breaker and attempt to heat the floor.

2. Confirm if the supply breaker is a dedicated line, only connected to the floor heating system.
    1. If the line is shared with other appliances, correct the wiring to comply with installation requirements (dedicated circuit).
2. At the thermostat location, remove the faceplate (there is a small screw at the bottom of the faceplate – loosen the screw but do not remove it) and remove the thermostat base from wall.
3. Inspect the wiring at the back of the thermostat and in the junction box in the wall.
    1. Ensure that there is no damage to the wires or thermostat.
    2. Ensure that the system is grounded properly. The braided metallic shields of the mat/cable should be tied to the grounding screw or copper in the junction box.
    3. Verify the wiring to the correct wiring diagram for the unit.
4. Disconnect the mat/cable (load) wires connected to terminals 1 & 4 on the thermostat backplate.
5. Using a digital multimeter with a fully charged battery set to 200 Ohms, perform the **Resistance** and **Insulation** tests. Instructions for how to perform these tests can be found in the Mat Installation Guide here.

Testing notes:

*Ensure all **Insulation** and **Resistance** testing is done at the factory cold lead location. If the mat or cable cold lead (load wire) has been terminated in a junction box (other than the thermostat location), you will need to access and test from the factory cold lead location.*

If there are multiple cold leads (load wires) from the floor, test each mat/cable cold lead separately and record your findings for each.

For 240 V mats or cables that are 20 sq. ft. or smaller, you will need to set your digital multi-meter to 2K ohms

1. If the ohms reading for the **Resistance** test is outside the testing parameters (more than 10% above / 5% below or showing an open line) then the heating element has been affected and will need to be inspected by a technician.
    1. Measure the voltage on the line side of the thermostat and ensure that it is the same voltage the load is rated for.
        - If the line voltage matches the load voltage, click here to fill out a repair request form. **Please make note of the Ohms and Insulation tests readings, notes on troubleshooting steps taken. Please take a photograph of the mat/cable UL/CSA tag that is on the end of the lead wires.**
        - If the line voltage measured is higher than the voltage rating for the load, the heating element is not repairable.

2. If the ohms reading for the **Insulation** test is outside the testing parameters (any ohms reading other than an open line) then the heating element has been affected and will need to be inspected by a technician.
    1. Measure the voltage on the line side of the thermostat and ensure that it is the same voltage the load is rated for
        - If the line voltage matches the load voltage, click here to fill out a repair request form. **Please make note of the Ohms and Insulation tests readings, notes on troubleshooting steps taken. Please take a photograph of the mat/cable UL/CSA tag that is on the end of the lead wires.**
        - If the line voltage measured is higher than the voltage rating for the load the heating element is not repairable.

6. If the **Insulation** and **Resistance** tests pass inspection (Step 5), the next step is to test the thermostats built-in GFCI.
    1. At the breaker panel, turn **OFF** the circuit breaker controlling the floor heating circuit.
        - Disconnect the mat/cable (load) wires connected to terminals 1 & 4 on the thermostat backplate.
        - Turn **ON** the circuit breaker controlling the floor heating circuit.
        - If it did not come on by itself, press & hold the **ON**/**OFF** button (located on the bottom right side of the thermostat faceplate) for 4 seconds.
        - Set the thermostat to **'Heat'** the floor
    2. If the thermostat **trips the GFCI with no load attached**, then the thermostat's GFCI/full unit will need to be replaced. . Please check the proof of purchase for the purchase date. For thermostats within the 3 year warranty period, click here to complete the Thermostat Backplate Replacement Form. **Proof of Purchase and a photo of the back of the faceplate of the unit is required for all warranty replacements.**

       For units past the warranty period, please purchase a new thermostat from an authorized dealer and have a certified electrician install it. There is a Where To Buy tool and Find An Installer on www.nuheat.com or contact customer care to help you locate a authorized dealer.

    3. If the thermostat **DOES NOT trip the GFCI**
        1. Reattach the mat/cable (load) wires to thermostat terminals 1 & 4 and set the thermostat to a **'Heat'**.
            - If the thermostat trips the GFCI only when a load is attached then the issue is in the floor and a site visit from a repair technician is required. Click here to fill out a repair request form. **Please make note of the Ohms and Insulation tests readings, notes on troubleshooting steps taken. Please take a photograph of the mat/cable UL/CSA tag that is on the end of the lead wires.**

2. Please call nVent NUHEAT Tech Support to ensure that the troubleshooting steps have been conducted properly.