



Mapeheat Floor-Heating Systems

# Mapeheat™ Thermo Connect: Red light troubleshooting

When Mapeheat Thermo Connect's red light is on or is blinking, try the following solutions for the listed causes.\*

Cause	Solution
<p>The Ground Fault Circuit Interrupter (GFCI) has been triggered.</p>	<p>First, determine the blinking pattern:</p> <p><b>Solid red light</b> Press the on/off button to reset the GFCI.</p> <p>If the red light is located at the <u>top</u> or on the <u>right</u> side of the thermostat and the red light does not turn off, this indicates a ground fault in the heating system. Contact your electrician or installer to verify the wiring and test the system with a digital multimeter.</p> <p><b>Slow blink</b> Press the on/off button to reset the GFCI.</p> <p><b>Fast blink</b> This indicates a ground fault in the heating system. Call your electrician or installer to verify the wiring and test the system with a digital multimeter.</p>

\* Note that if the GFCI Test Button was pressed, the screen will display the message "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 right side of the thermostat) once.

If the solutions above do not resolve the issue, follow the appropriate instructions below.

### Steps for homeowners

1. At the thermostat location, press the reset button located on the bottom right side of the thermostat faceplate once. This should reset the error message and the red light. For further reference, see the *Mapeheat*

*Thermo Connect* Operating Manual at: [https://cdnmedia.mapei.com/docs/librariesprovider10/line-technical-documentation-documents/mapeheat-thermo-connect-operating-manual-en.pdf?sfvrsn=2055fe76\\_22](https://cdnmedia.mapei.com/docs/librariesprovider10/line-technical-documentation-documents/mapeheat-thermo-connect-operating-manual-en.pdf?sfvrsn=2055fe76_22)

- A. If the error message and red light disappear, set the thermostat to "Heat" and allow the floor to heat up.
  - i. If the floor heats and the error message and red light do not reappear, continue to operate the system normally.
  - ii. If the thermostat trips the GFCI as soon as the heating indicators are displayed on the screen, call your electrician and proceed to "Steps for electricians" as listed below.
- B. If the error message and red light do not disappear, turn **OFF** the circuit breaker that controls the floor heating circuit. Leave the breaker **OFF** for 10 seconds, then turn the breaker back **ON**.
  - i. If the thermostat resets and the floor heats up, continue to operate the system normally.
  - ii. 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 your site to perform the "Steps for electricians" shown below.

### Steps for electricians

1. At the breaker panel, turn **OFF** the circuit breaker controlling the floor-heating circuit.
  - A. Confirm that the supply breaker is a standard breaker (not GFCI).
    - i. If the breaker is a GFCI, replace with a standard breaker and attempt to heat the floor.
  - B. Confirm whether the supply breaker is a dedicated line, connected only to the floor-heating system.
    - ii. 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 (loosen the small screw at the bottom of the faceplate, but do not remove it), and then remove the thermostat base from wall.

3. Disconnect the mat/cable (load) wires connected to terminals 1 and 4 on the thermostat's backplate.
4. 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 *Mapeheat Mat* Installation Manual at: [https://cdnmedia.mapei.com/docs/librariesprovider10/line-technical-documentation-documents/en-mapeheat-mat-installation-manual.pdf?sfvrsn=e9b51374\\_24](https://cdnmedia.mapei.com/docs/librariesprovider10/line-technical-documentation-documents/en-mapeheat-mat-installation-manual.pdf?sfvrsn=e9b51374_24)
5. If the insulation and resistance tests pass inspection, the next step is to test the thermostat's built-in GFCI.
  - A. At the breaker panel, turn **OFF** the circuit breaker controlling the floor heating circuit.
    - i. Disconnect the mat/cable (load) wires connected to terminals 1 and 4 on the thermostat backplate.
    - ii. Turn **ON** the circuit breaker that controls the floor-heating circuit.
    - iii. If it did not come on by itself, press and hold the **ON/OFF** button (located on the bottom right side of the thermostat faceplate) for 4 seconds.
    - iv. Set the thermostat to "Heat" the floor.
  - B. If the thermostat trips the GFCI with no load attached, then the thermostat's GFCI will need to be replaced. Contact MAPEI's Technical Services Department for a thermostat backplate replacement part to be sent to you.
  - C. If the thermostat does not trip the GFCI:
    - i. Reattach the mat/cable (load) wires to thermostat terminals 1 and 4 and set the thermostat to "Heat."
    - ii. 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. Contact MAPEI's Technical Services Department to schedule the repair service. Once the repair technician is on site, he/she will be able to determine if the damage is covered under warranty.

### Notes on insulation and resistance tests

Ensure that 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. (1.86 m<sup>2</sup>) or smaller, set your digital multimeter to 2K ohms.

- A. If the ohms reading for the resistance test is outside the testing parameters (more than 10% above or 5% below, or showing an open line), then the heating element has been affected and needs to be inspected by a technician.
  - i. Measure the voltage on the line side of the thermostat and ensure that it is the same voltage that the load is rated for.
    - a. If the line voltage matches the load voltage, contact MAPEI's Technical Services Department to schedule a repair.
    - b. If the line voltage measured is higher than the voltage rating for the load, the heating element is not repairable.
- B. 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 needs to be inspected by a technician.
  - i. Measure the voltage on the line side of the thermostat and ensure that it is the same voltage that the load is rated for.
    - a. If the line voltage matches the load voltage, contact MAPEI's Technical Services Department to schedule a repair.
    - b. If the line voltage measured is higher than the voltage rating for the load, the heating element is not repairable.

For technical assistance in the USA, call 1-800-992-6273. For technical assistance in Canada, call 1-800-361-9309.

