Thermal Analysis in Meters

help.fracttal.com/hc/en-us/articles/46759258553357-Thermal-Analysis-in-Meters

Thermal analysis in Fracttal One automatically monitors the temperature behavior of assets with connected sensors. With each reading received, the system calculates the rate of temperature change within a 15-minute sliding window, evaluates if that change persists over time, and compares it to the limits configured in the meter. The result is displayed on the dashboard **Temperature**, within **Asset Health**, on each asset's tab.

The lower and upper temperature limits must be defined in the meter for the analysis to operate. Without these values, the dashboard does not display data and no alerts are generated.

Prerequisites

For thermal analysis to work properly, verify that the following conditions are met:

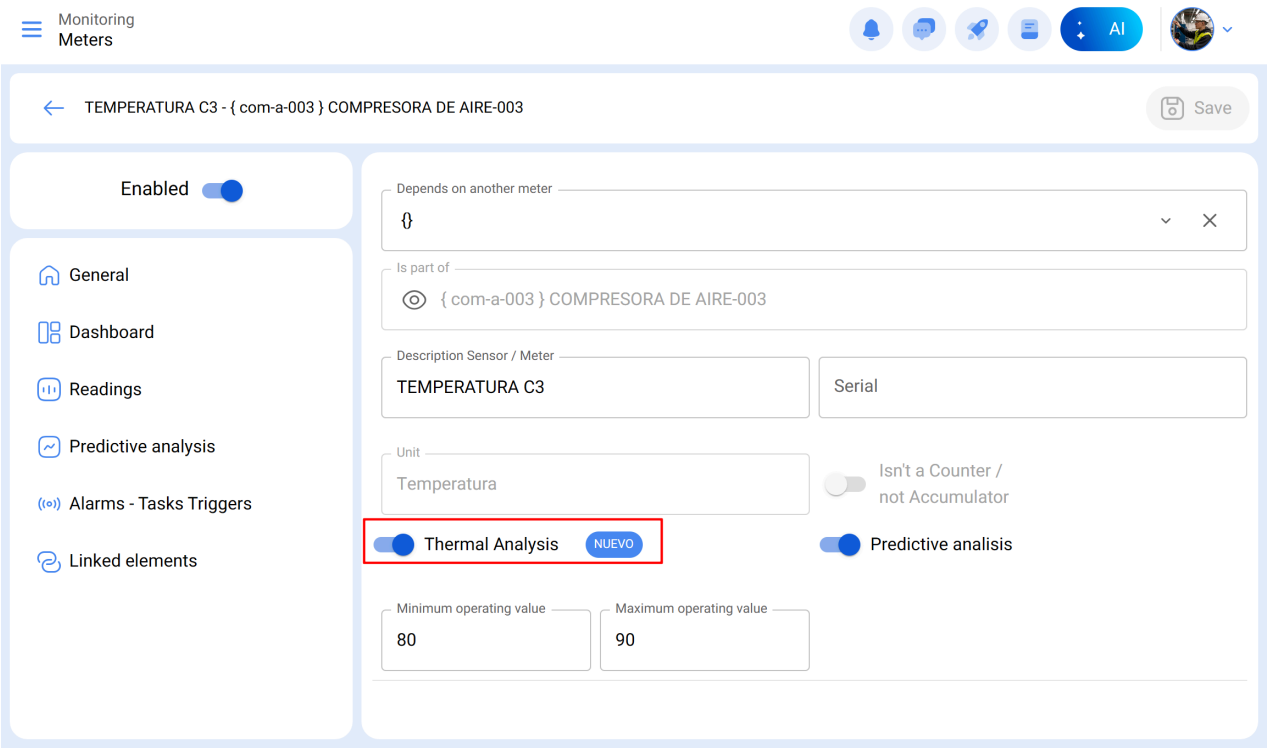
- The meter must be of **non-accumulating** type. Meters that record cumulative values (hours, kilometers, or other counter units) are not compatible with thermal analysis.
- The meter must have the **Lower Limit** and **Upper Limit** of temperature configured. Without these values, the thermal percentage calculation has no reference and the functionality does not operate.
- The asset must have a linked and active temperature sensor in **Fracttal Sense**, sending readings normally.
- Readings must arrive within a **15-minute window**. The system calculates the gradient only between readings that fall within this time interval. Readings separated by more than 15 minutes do not generate gradient calculations.
- A **minimum of 2 readings** within the window is needed for the gradient to start calculating. The first recorded reading does not generate indicators; the analysis appears from the second reading onward.

Note: The analysis window stabilizes at 5 readings. From that point, the system calculates the gradient always considering the last 5 readings available within the 15-minute window.

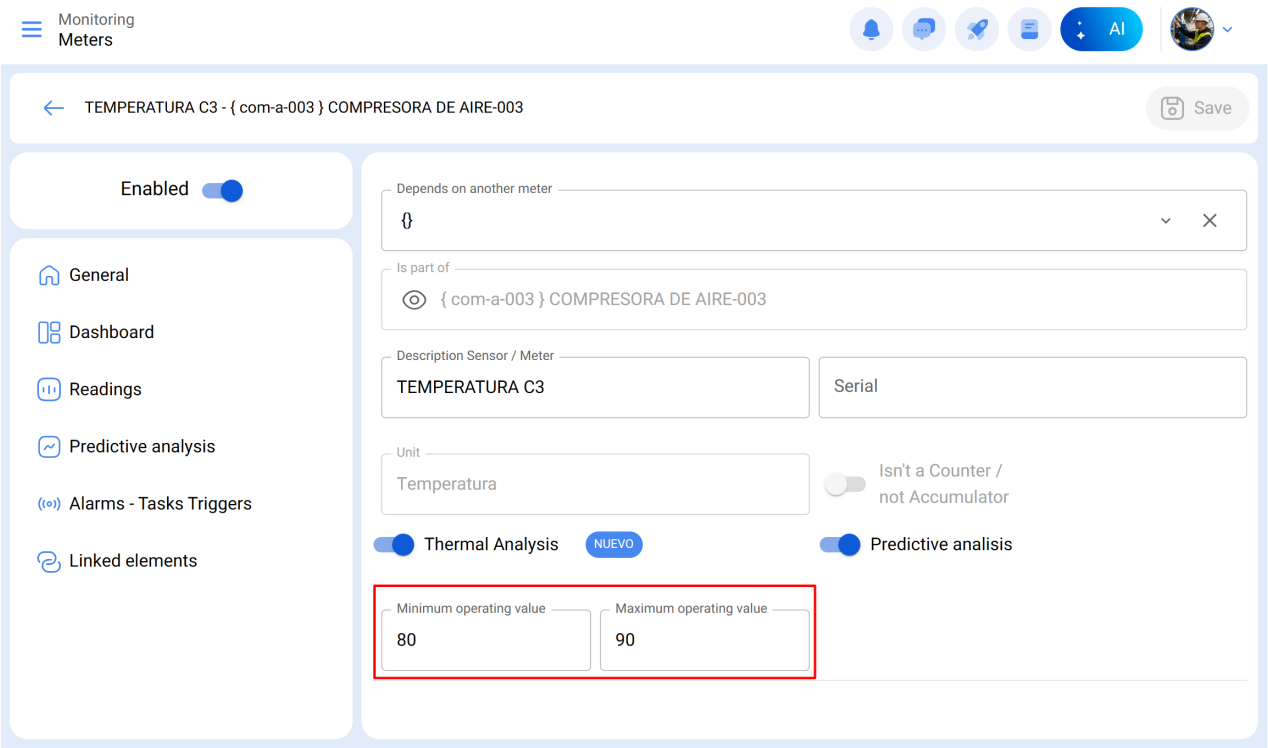
Configuration

1. Enable thermal analysis on the meter

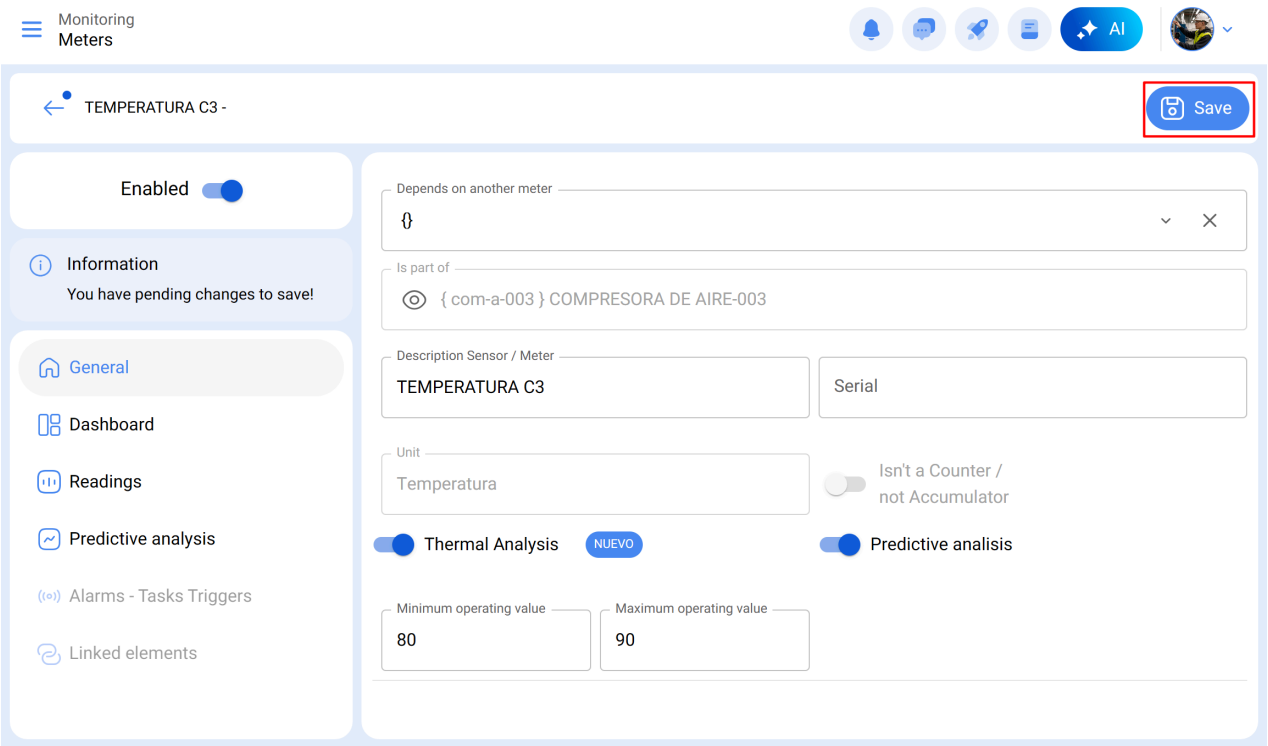
1. Go to **Monitoring > Meters**.
2. Select an existing meter or create a new one.
3. In the meter settings, activate the **Thermal Analysis** option.



4. Define the **Lower Limit** and **Upper Limit** of temperature.



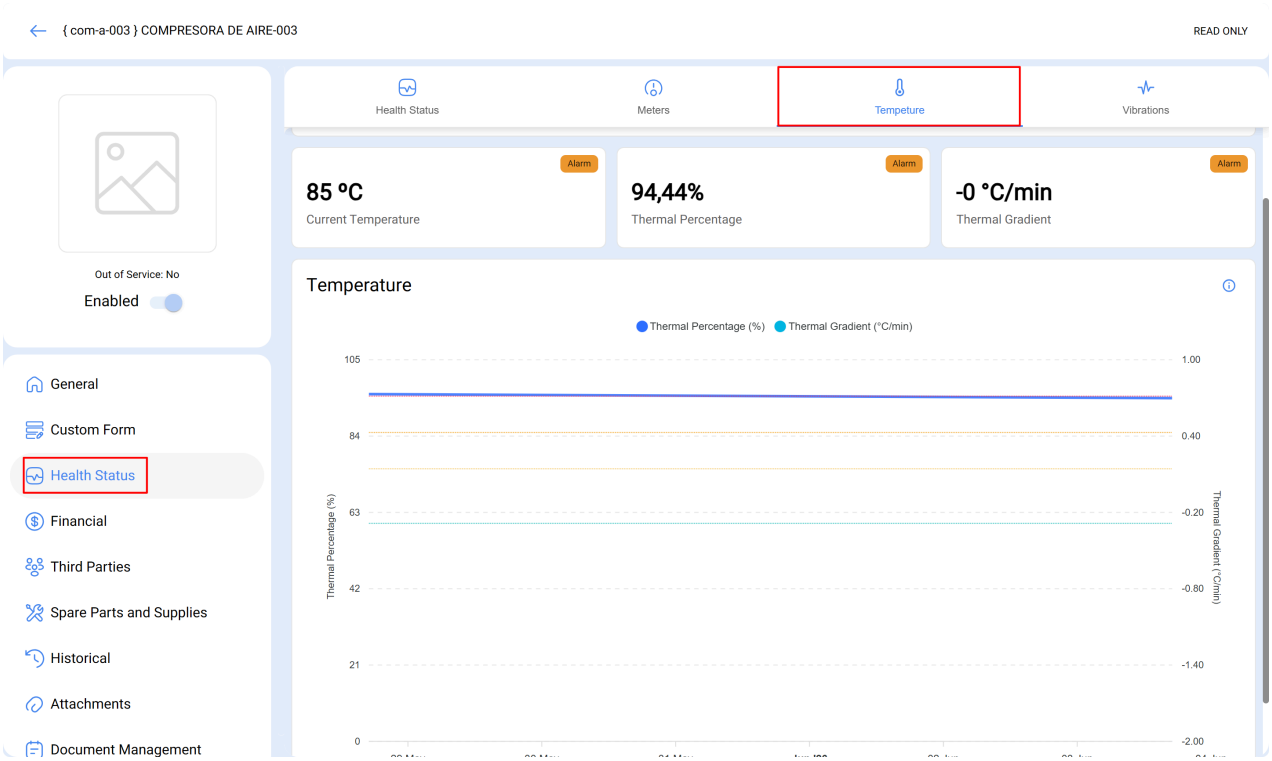
5. Click **Save**.



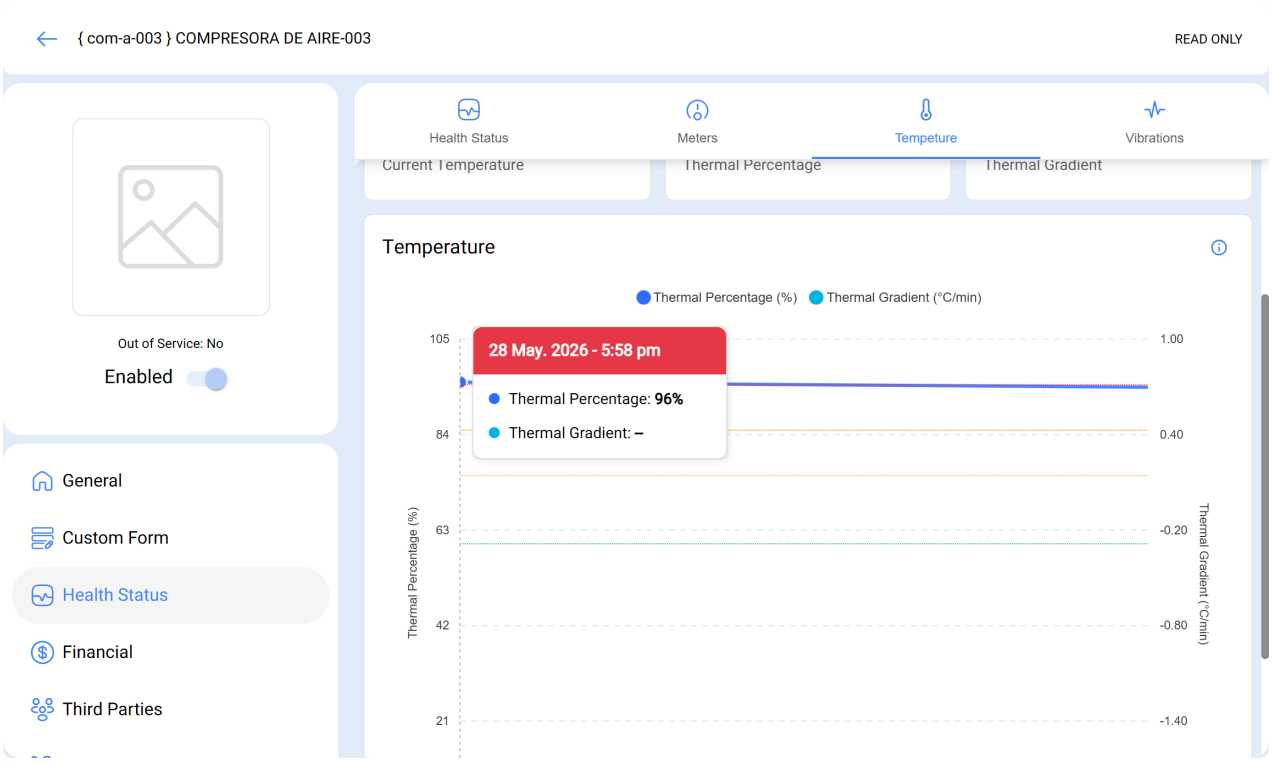
Once saved, the system starts calculating thermal indicators with each new reading registered by the meter.

2. View the Temperature dashboard

1. From the asset tab, go to **Asset Health > Temperature**.



2. You will see the temperature variation rate curve (dT/dt) and the persistence and thermal percentage indicators.



3. If alerts have been generated, they will appear marked on the historical series.