

Use Case S1: Detailed Description

Use Case Name: Monitor Temperature Data

Scenario: Record Daily Temperature Extremes

Brief Description: With the System running, the System records the temperature extreme data—the minimum and maximum temperature—from the 1-wire temperature sensor.

Actors: System

Related Use Cases:

Use Case S7: *The System Shall Save Temperature Extremes*

Stakeholders: Local and National Weather Bureaus and individuals monitoring local weather data.

Preconditions: The System is running, the temperature data is received from the thermometer hardware. The extreme temperature data values are initialized: -999.9 for max, 999.9 for min.

Postconditions: The extreme data temperature (minimum and maximum) data found and noted and converted to three units (Celsius, Fahrenheit, Kelvin).

Flow of Events

System	One Wire Temperature Sensor
	1. Return requested temperature data measured
2. Records the date/time of the current temperature measurement.	
3. Compare the current temperature against both the minimum and maximum.	
4. Record the current temperature as an extreme if it is less than or equal to the minimum or greater than or equal to the maximum.	
5. Record the date and time for <i>event 4</i>	

Exception Conditions

1a. If the One Wire Temperature sensor stops working, then the System changes neither the minimum nor maximum values.

1b. If the One Wire Temperature sensor returns an error, then the System changes neither the minimum nor maximum values.

1c. If the One Wire Network breaks, then the System changes neither the minimum nor maximum values.