

Use Case S2: Detailed Description

Use Case Name: Monitor Humidity Data

Scenario: N/A

Brief Description: With the System running, the System monitors the the humidity data by periodically requesting humidity data from the 1-wire temperature sensor.

Actors: System

Related Use Cases:

Use Case A1: *The Administrator shall set the Measurement Reate for all active hardware sensors*

Use Case S10: *The System Shall Save Humidity data*

Use Case S11: *The System Shall Monitor and Save Humidity Extreemes*

Stakeholders: Local and National Weather Bureaus, other systems and users monitoring local weather data.

Preconditions: The System is running, the Measurement rate is set, the network is setup and working, the hygrometer hardware is connected to the network.

Postconditions: The Raw Humidity data is received from the hygrometer hardware and converted to an actual Relative Humidity value. The Relative Humidity data is received from the hygrometer hardware.

Flow of Events

System	One Wire Temperature Sensor
1. Periodically request raw humidity data from the One Wire Humidity Sensor	2. Returns the raw humidity data (the supply and output voltages)
3. Converts the raw humidity data (input and supply voltages) into relative humidity	
4. Periodically request humidity data from the One Wire Humidity Sensor	5. Returns the relative humidity data

Exception Conditions

2a. If the One Wire Humidity Sensor stops working (drops out), then the System shall handle the error and report a default humidity (-99.9%).

2b. If the One Wire Humidity Sensor returns an error, then the System shall handle the error and report a default humidity (-99.9%).

2c. If the One Wire Network breaks, then the System shall report an error and display default humidity value (-99.9%).

5a. If the One Wire Humidity Sensor stops working (drops out), then **the System shall follow what is written in Section 2a in the Exception Conditions Section**.

5b. If the One Wire Humidity Sensor returns an error, then **the System shall follow what is written in Section 2b in the Exception Conditions Section**.

5c. If the One Wire Network breaks, then **the System shall follow what is written in Section 2c in the Exception Conditions Section.**