

### Use Case S3: Detailed Description

Use Case Name: Monitor Barometric Pressure

Scenario: N/A

Brief Description: With the System running, the System monitors the barometric pressure by periodically requesting raw voltage data from the 1-Wire Barometric Pressure Sensor.

**Note:** *The 1-Wire Barometric Pressure Sensor is essentially a Specially Modified DS2438 Smart Battery Monitor that can be used to measure Barometric Pressure.*

Actors: System

Related Use Cases:

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

**Use Case S12:** *The System Shall Save the Barometric Pressure data*

**Use Case S13:** *The System Shall Monitor and Save Barometric Extremes*

**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 1-Wire Network is setup and working, the barometer hardware is connected to the network and working properly.

**Postconditions:** The Raw Barometric Pressure data is received from the Barometric Pressure Sensor Hardware and converted to actual barometric pressure data.

#### Flow of Events

System	One Wire Barometric Sensor
1. Periodically request raw barometric pressure data from the One Wire Barometric Pressure Sensor	2. Returns the raw Barometric Pressure data (the supply and input voltages)
3. Converts the raw Barometric Data (input and supply voltages) into barometric pressure	

#### Exception Conditions

2a. If the 1-Wire Barometric Pressure Sensor stops working (drops out), then the System shall handle the error and report a default barometric pressure (-99.9).

2b. If the 1-Wire Barometric Pressure Sensor returns an error, then the System shall handle the error and report a default barometric pressure (-99.9).

2c. If the 1-Wire Network breaks, then the System shall report an error and display a default barometric pressure (-99.9).