

# Gen1.1 Sensor Operation Manual

AGM Sensor Part Number 357200

## Overview

This document covers the operation and specifications of the Gen1.1 AGM Humidity Sensor unit. Additional accessories include the IR Flashlight and Sensor Configuration Tool for use with a PC.

## Operation Specifications

### Operating Temperature range:

-25°C to +60°C

### Operating Humidity range:

0%RH to 100%RH (Condensing)

### Operating Pressure range:

-4 PSID to +3 PSID

### Temperature Accuracy:

±1°C (@ -25°C to +60°C, does not include effects of long-term drift)

### Humidity Accuracy:

±3% (20%RH to 80%RH @ +25°C, does not include effects of long-term drift)

### Timekeeping Accuracy:

±10 Hours (Over 21 years of operation)

### Sensor Lifetime:

21 Years total operation

### Datapoint Storage Capacity:

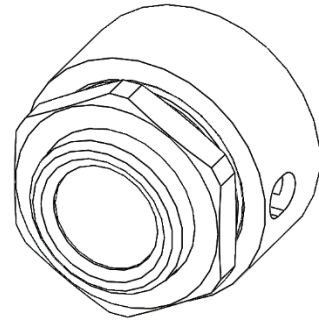
175,320 datapoints

### IR Serial Datarates:

Standard IrDA Communication: 9615 Baud (Compatible with 9600 Baud)

High-Speed IrDA Communication: 111,111 Baud

IR Camera Communication: 12.5 Baud



## Sensor LED Reference

LED Action	Status
Solid Green, 5 seconds	Sensor is reporting that the humidity has NOT exceeded the trigger limit ('Good')
Flashing Red, 5 seconds	Sensor is reporting that the humidity has exceeded the trigger limit ('Bad')
Alternating Red and Green, 5 seconds	Sensor has been activated and will begin to record data
Solid Orange, 4 seconds	Sensor is initializing for the first time or the sensor is recovering from a power failure

## Sensor Configuration

Refer to the Configuration Tool Manual for instructions on setting the sensor trigger level.

## Sensor Installation

1. Remove the protective cap, mounting nut, and external gasket (black) from an un-activated sensor.
2. Lubricate the external gasket with silicone grease or an equivalent. The gasket material is synthetic rubber in accordance with MIL-R-6855 (typically nitrile or chloroprene).
3. Install the plug through a  $\varnothing 1.05 \pm .015$ " hole in the container, with the plug window facing outward. Humidity enters through the side ports in the plug body, so access to these ports must be unimpeded.
4. Secure the plug in the container using the lubricated gasket and mounting nut, and tighten the nut to 30-40 in-lbs. If the gasket was not sufficiently lubricated, it will relax over time, requiring re-tightening of the nut.

## Sensor Activation

1. Shine the IR Flashlight at the sensor window for approximately one second until the sensor activation LED sequence is displayed (alternating red and green). The sensor is now active.
2. Upon activation, the current time is permanently recorded and the first measurement will occur at the top of the next hour.

## Sensor Operation with IR Flashlight

1. Shine the IR Flashlight at the sensor window for approximately one second until the sensor report LED sequence is displayed.
2. If the humidity has not exceeded the trigger level, the sensor will report a 'Good' status, else a 'Bad' status will be displayed.

## Sensor Operation Without IR Flashlight

1. Press firmly on the sensor window for approximately one second until the sensor report LED sequence is displayed.
2. If the humidity has not exceeded the user defined limits, the sensor will report a 'Good' status, else a 'Bad' status will be displayed.

## Sensor Operation with Floodlight

1. Shine the IR Floodlight at the sensor window until the sensor transmits its data over IR.
2. An IR Camera will receive the 24-bit data transmitted by the sensor (Approximately 1.92 seconds)

Data Bit Position	Data Description
[2:0] Preamble	Preamble is '101'
[22:3] Serial Number	20-bit Serial Number
[23] Sensor Status	Bit equals 1 if sensor is reporting that the humidity has NOT exceeded the set limit, else the bit equals 0