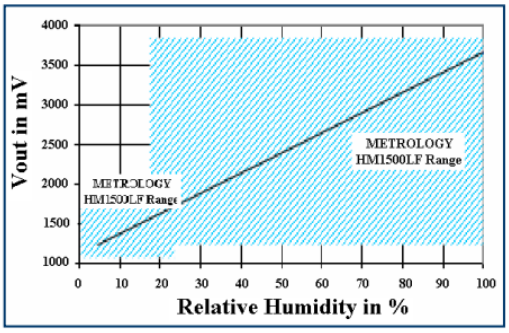
My design approach to the question is first understanding the given RH sensor and making the design choices accordingly.From the datasheet important points to be noted are.

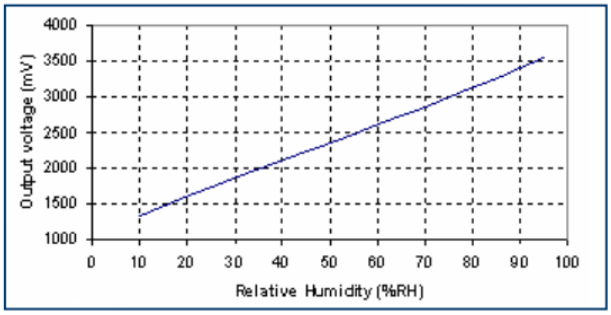
Features

- Full interchangeability
- High reliability and long term stability
- Not affected by water immersion
- Very low temperature dependence
- Suitable for 3 to 10 Vdc supply voltage

This temperatures sensor in range of 0 -95 % by giving output in terms of voltage



- Modeled Signal Output



RH (%)	Vout (mV)	RH (%)	Vout (mV)
10	1325	55	2480
15	1465	60	2605
20	1600	65	2730
25	1735	70	2860
30	1860	75	2990
35	1990	80	3125
40	2110	85	3260
45	2235	90	3405
50	2360	95	3555

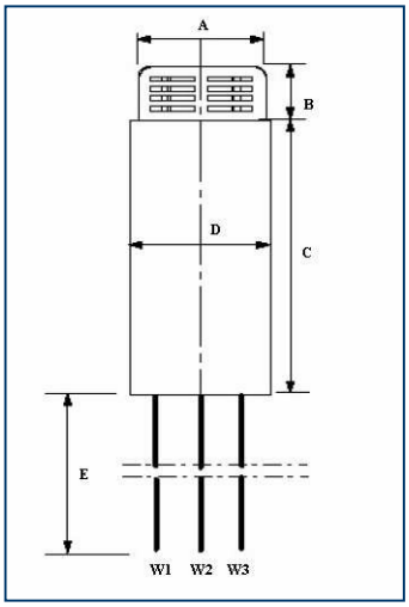
The relationship between RH and voltage is linear by the formulae given below.

LINEAR EQUATIONS:

- $V_{out} = 25.68RH + 1079$
- $RH = 0.03892\ V_{out} - 42.017$

(With V_{out} in mV and RH in %)

Since that we need to detect when relative humidity goes between 30%-60% So we need to design a circuit that switches on the buzzer when the voltage range is 1.8 V to 2.6V. Since our circuit is voltage based we need a voltage divider circuit and piezo buzzer(voltage based).Since my device will be a wall mounted and voltage supply will be giving battery of 9v



Dim	Min (mm)	Max (mm)
A	9.75	10.25
B	4.00	4.50
C	53	55
D	10.9	11.4
E*	200	250

** Specific lenght available on request*

Wire	Color	Function
W1	White	Ground
W2	Blue	Supply Voltage
W3	Yellow	Humidity Output Voltage