

Humidity Sensor of CM-R

1. CM-R Features

- High resistance to a water
- Low cost performance
- Long term stability
- Very low hysteresis
- Fast response time
- Small dimensions
- Wide humidity operating range

2. Typical Applications

- Air-conditioner
- Humidifier-Dehumidifier
- Automobile
- Clean room
- Food products
- Humidity controller & Transmitter

3. Electrical Characteristics

Type	CM-R
Rated Voltage	5VAC Max.(Sine wave)
Rated Power	5mW. AC (MAX)
Operating Temperature Range	-20 to 70 °C
Operating Humidity Range	95%RH or Less
Operating Frequency	100Hz ~ 10kHz
Resistance Value	31 Kohm (at 25 °C, 60 ± 3%RH, 1kHz)
Storage Temperature Range	-20 ~ 85 °C
Storage Humidity Range	95%RH or less
Hysteresis	≤ ± 2%RH
Response Time	≤ 60 sec (30%RH ⇔ 90%RH)

4. Mechanical Test

- Lead Bend Strength

The humidity sensor is kept in the vertical direction and the leads should be bent 1 cycle in the direction of 90 degree of load applied 250g.

No change in appearance or performance is allowed.

- Lead strength test

A load of 1kg is applied to each lead in the vertical plane against the surface of the sensor for 60 ±1 seconds.

No change in appearance or performance is allowed.

- Drop Test

Humidity sensor is dropped on to a wooden surface from a height of 1 m three times.

No change in appearance or performance is allowed.

5. Reliability Test

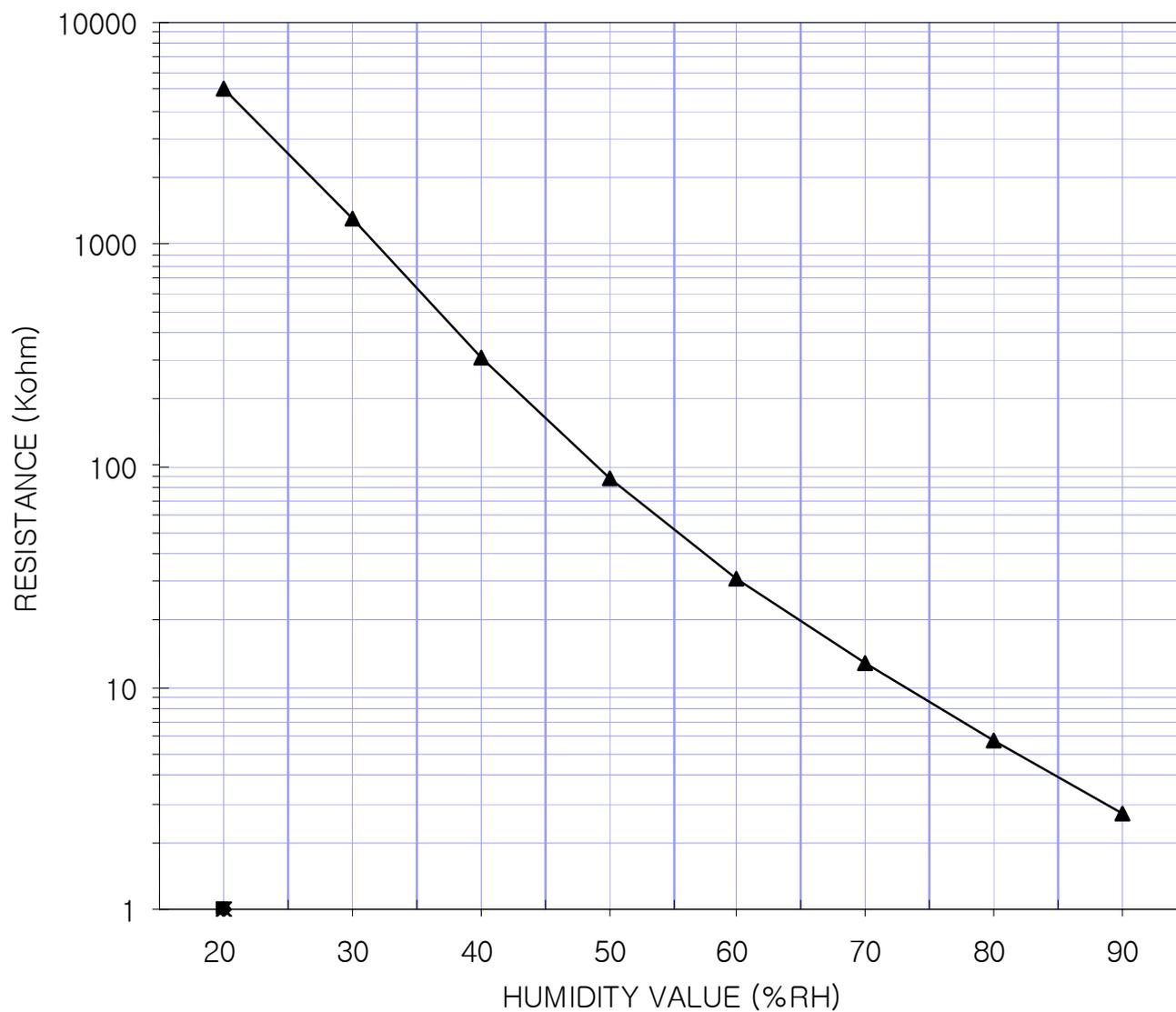
Test Item	Test Condition	Criterion
High Temperature	85 °C for 1000 hours	After completion of testing,leave for one hour normal humidity condition temperature, and then measure. 1. Sensitivity : within 5%RH 2. External : No significant damage.
Low Temperature	-30 °C for 1000 hours	
Low Humidity	25 °C ,20%RH for 1000 hours	
High Temperature & Humidity Conditions	60 °C ,90%RH for 1000 hours	
Temperature Cycle	-30 °C ,30min ⇔ 85 °C ,30min for 100cycle	
Humidity Cycle	25 °C ,30%RH ⇔ 25 °C ,90%RH for 500cycle	
Moisture Load Life	45 °C ,90%RH,1VAC, 1kHz,1000 hours	
Water Resistance	In Water for 10minutes	
Alcohol Resistance	Methanol 50%, Ethanol 50% for 300hours	

6. CM-R Standard Characteristics

% R.H.	20	30	40	50	60	70	80	90
Spec	5000	1300	310	87	31	13	5.7	2.7

(Unit : Kohm)

(Condition : at 25 °C,1VAC,1kHz)

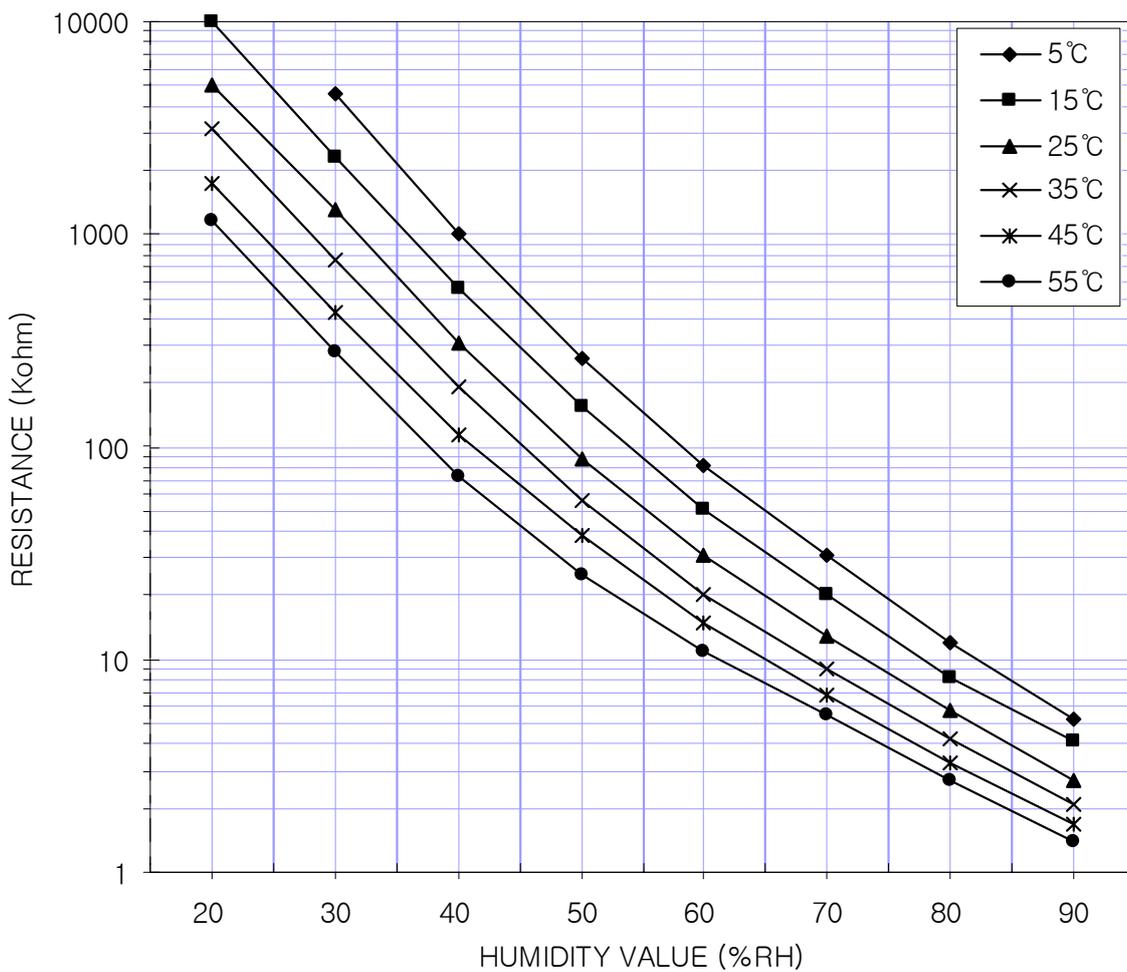


7. CM-R Response Curve (Resistance against Humidity)

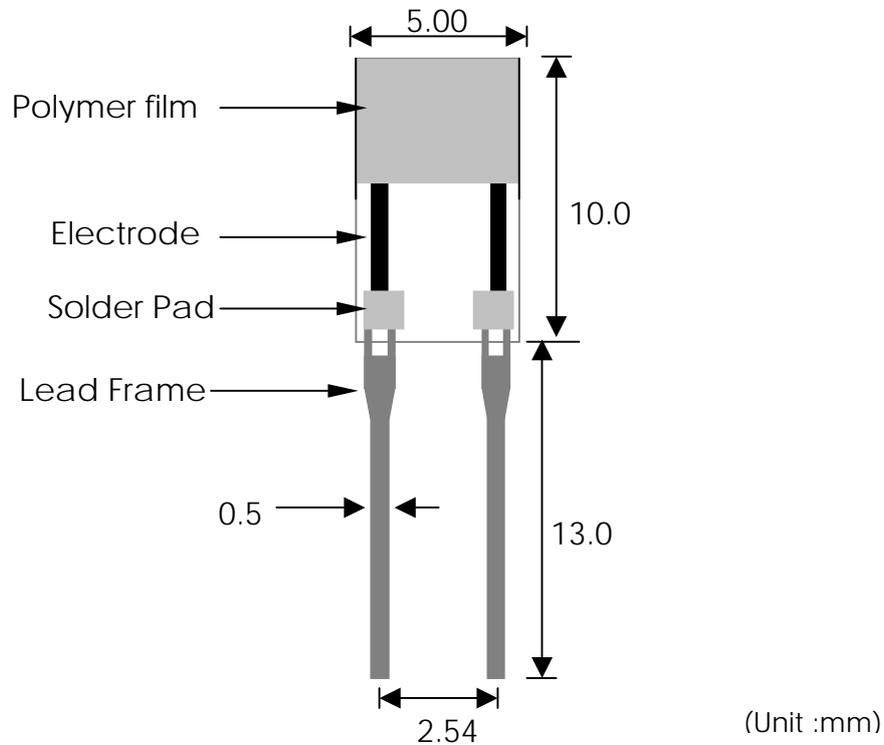
	5 °C	15 °C	25 °C	35 °C	45 °C	55 °C
20 % RH		10000	5000	3100	1750	1170
30 % RH	4550	2330	1300	750	430	280
40 % RH	1000	550	310	190	115	72
50 % RH	258	155	87	56	38	25
60 % RH	82	51	31	20	15	11
70 % RH	31	20	13	9.0	6.8	5.5
80 % RH	12	8.3	5.7	4.2	3.3	2.7
90 % RH	5.2	4.1	2.7	2.1	1.7	1.4

(Unit : Kohm)

(Condition : at,1VAC,1kHz)



8. Dimensions



9. User Notes

- Do not use DC voltage directly to Humidity sensor.
- Do not use organic solvents, wipe the surface softly using cotton stick in which boiling steam has penetrated, when cleaning humidity sensing surface.
- Do not expose sensor directly to smoke from cigarettes, steam.
- Do not touch the sensing surface with wet hands.