



Macromolecule Humidity Sensor

(Model: MS-Z2)

Manual

Zhengzhou Winsen Electronics Technology Co., Ltd

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MS-Z2 Macromolecule Humidity Sensor

Overview

In wet conditions, water molecules are adsorbed by polar group on the surface of material. And as the humidity increases, the quantity of water molecules will be changed accordingly. The adsorbed water is gradually condensing and coming into being liquid, which is electrolyte solution with current channel quality.

With the humidity increasing, macromolecule will swell, interior free volume will be bigger, carrier will be increased and the activated energy of macromolecule polyelectrolyte counter-ions will decrease, drift mobility will increase and impedance will decrease. And then when humidity decreases, water molecules are released from ion polymer and the resistor of material will increase. The environment humidity can be monitored through testing the impedance.

Features

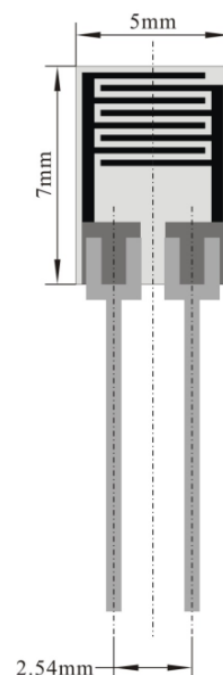
- Wide humidity detected range
- Fast response
- Small Humidity hysteresis error
- Simple manufacture
- Easy integration

Application

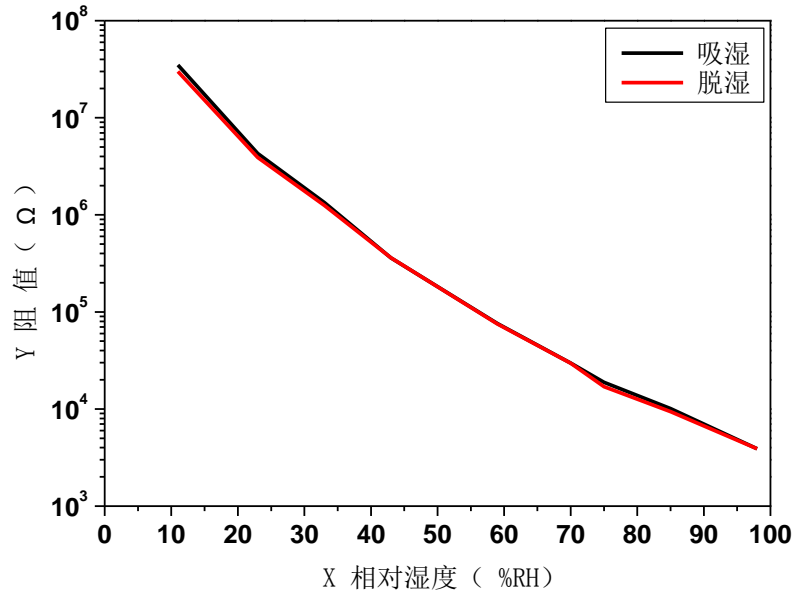
Humidity sensor, as an important chemical sensor, which is widely used in fields of warehousing, industry production, and process control, environmental monitoring, home appliances and meteorology etc.

Technical specification Basic testing circuit

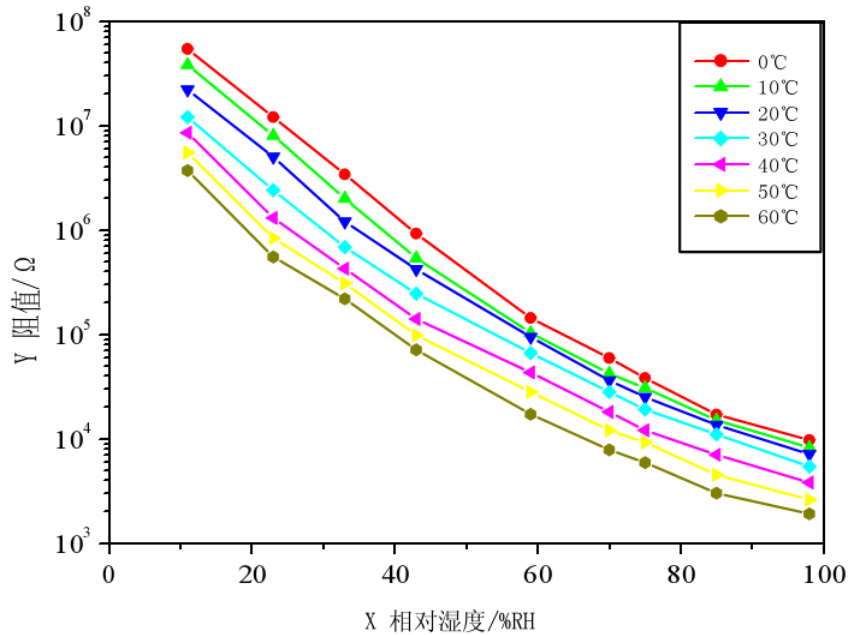
	Temperature	Humidity
Working range	0~60°C	10~90%RH
Storage range	-25~70°C	≤95%RH(non condensation)
Detection range		10~90%RH(0~60°C)
Rated voltage	1.5V AC(MAX, sine wave)	
Rated power	0.2mW(MAX, Rated voltage)	
Working frequency	500Hz~2kHz	
Nominal value &range	31 (21~50) KΩ(60%RH, 25°C) 23(15~35)KΩ(60%RH, 25°C)	
Temperature Character	≤0.5%RH/°C	
Hysteresis	±2%RH	
Response time	Moisture absorption: ≤20s Dehumidification: ≤40s	
Stability	2%RH/year	
Accuracy	3%RH	



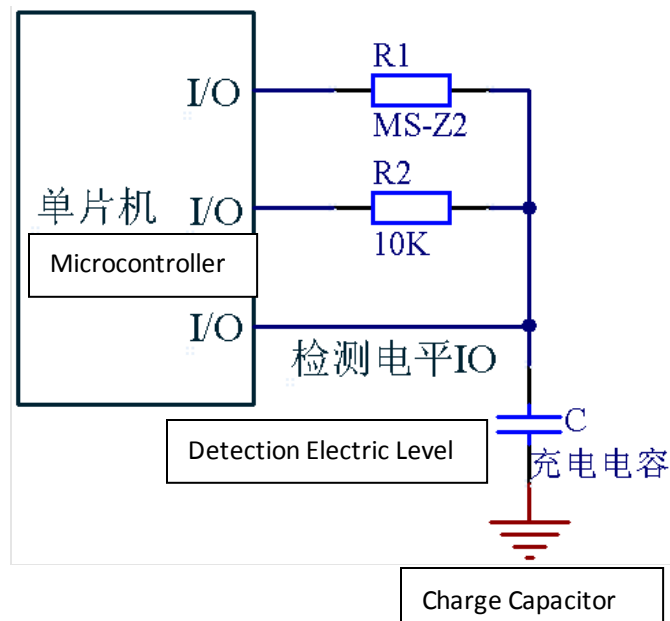
Sensitivity & Humidity Hysteresis Error Curve



Temperature & Humidity Characteristic



Application Circuit



Note

- To avoid Polarization, the voltage or current driving the sensor should be AC
- Please using LCR AC bridge to measure, and multi-meter is prohibited.
- Avoid Water coagulation
- Putting the sensor under the High causticity place is prohibited
- Recommend storage conditions:
 Temperature: 10°C~ 40°C
 Humidity: under 60%RH

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