

## 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

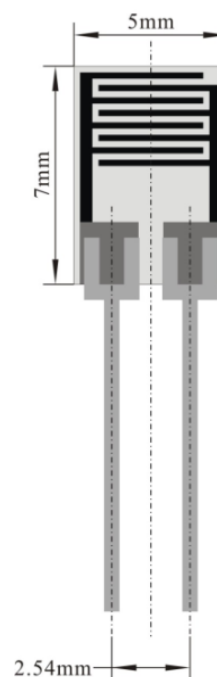
Easy integration

### Application

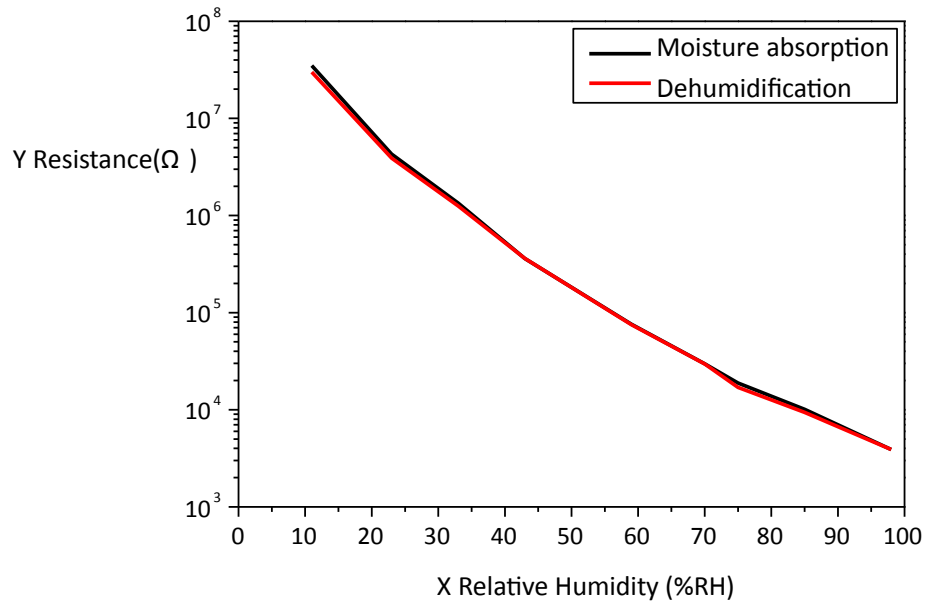
Humidity sensor, as an important chemical sensor, which is widely used in fields of warehousing, industry production, and process control, environmental monitoring, home appliances and meteorology etc.

### Technical specification Basic testing circuit

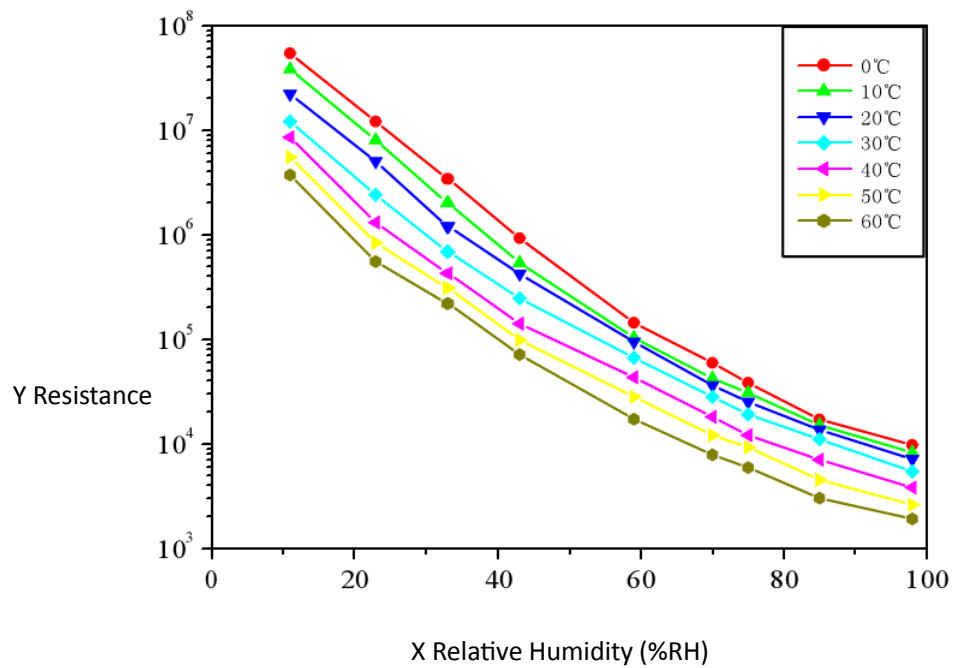
	Temperature	Humidity
Working range	0~60°C	10~90%RH
Storage range	-25~70°C	≤95%RH(non condensation)
Detection range	10~90%RH(0~60°C)	
Rated voltage	1.5V AC(MAX, sine wave)	
Rated power	0.2mW(MAX, sine wave)	
Working frequency	500Hz~2kHz	
Nominal value&range	31 (20~50) KΩ(60%RH, 25°C) 23(15~35)KΩ(60%RH, 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	



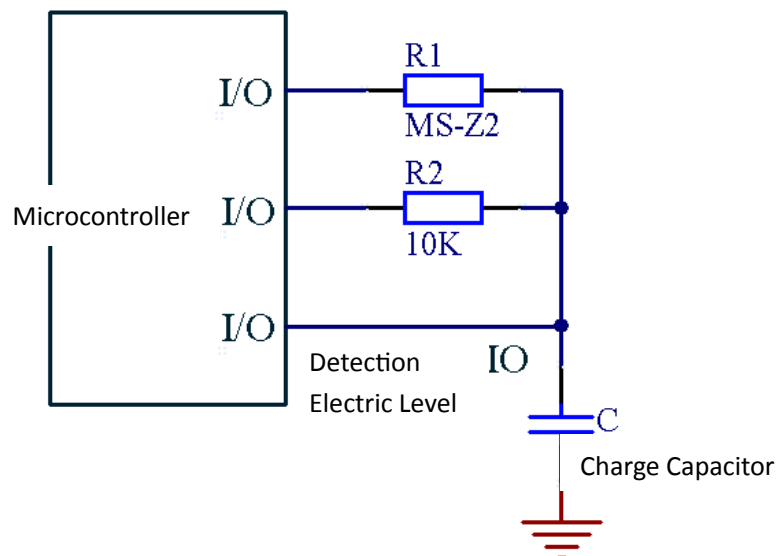
### Sensitivity & Humidity Hysteresis Error Curve



### 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