

Product Specifications

HR002

Humidity Sensor

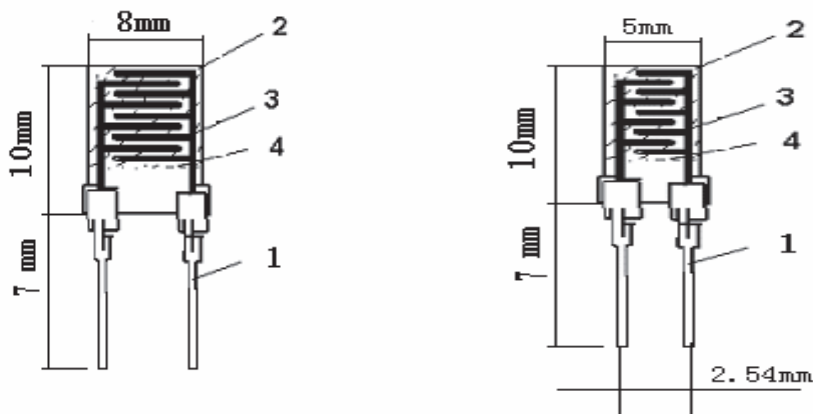
1. Introduction

This specification shall be applied to the relative humidity sensor element. This sensor (GY HR002) is a new type of humidity sensitive components, has wide operating humidity range, with fast response characteristics, strong ability to fight pollution, resist dewing , small hysteresis, stable and reliable performance, good consistency.

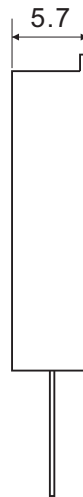
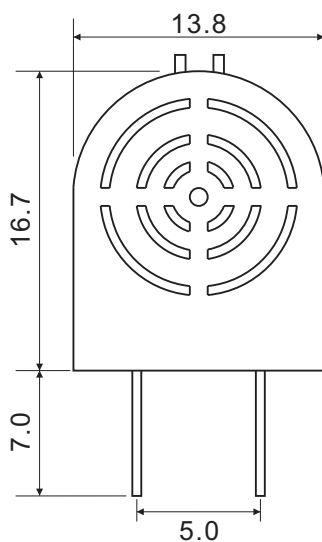
2. Type Designation

GY-HR002, 31K Ω

3. Outline Dimensions



1. Lead Terminal 2. Substrate 3. Carbon Electrode 4. Polymeric Film



Unit : mm

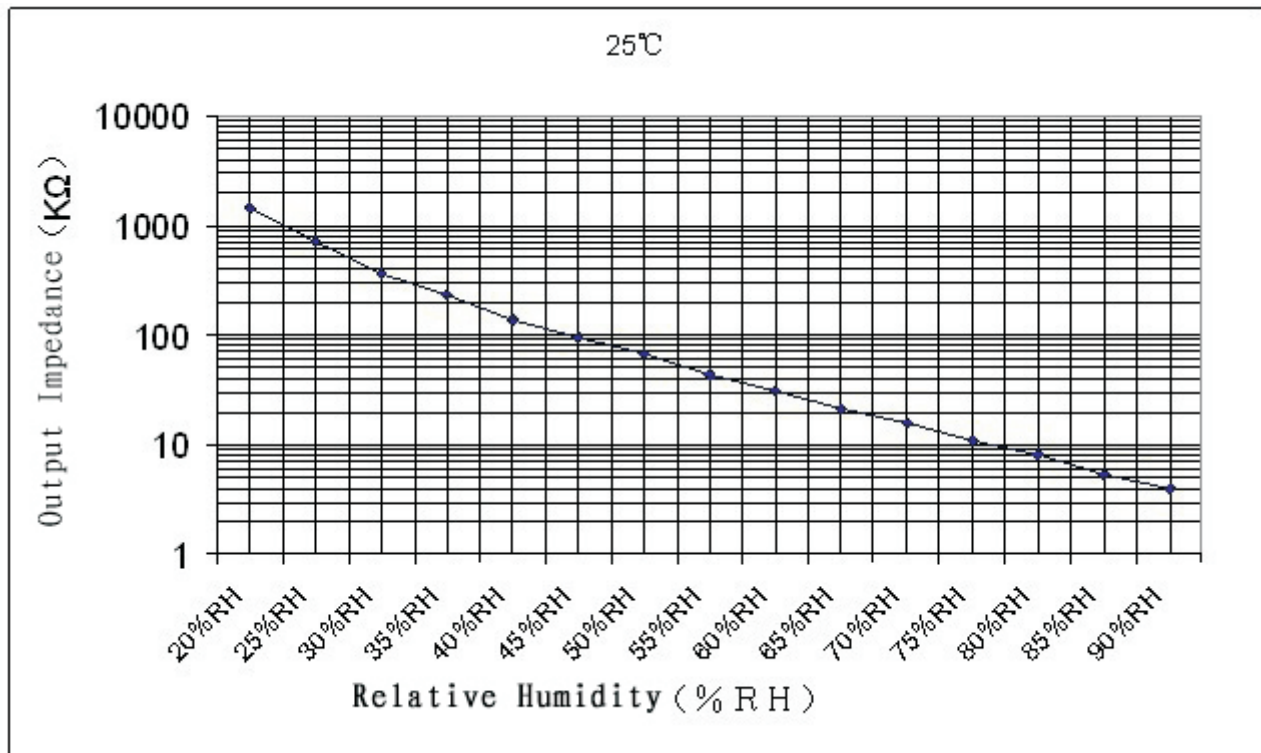
4. Scope of application

The devices normal apply to electron trade, textile industry, storehouse, pharmacy, weather station etc; Temperature and humidity indicator, humidifier, dehumidifier, air condition, microwave oven etc.

5. Electrical Characteristics

① Rated Voltage: The sine wave or square wave of AC 1.5V

- ② Rated Power: 0.2 m W
 - ③ Operating Frequency: 50Hz - 2000Hz
 - ④ Operating Temp. Range: 0°C - 60°C
 - ⑤ Operating Humidity Range : 20%-95%RH
 - ⑥ Temperature Characteristics: $\leq 0.5\%RH/^{\circ}C$
 - ⑦ Hysteresis Characteristics: $\leq 2\%RH$;
 - ⑧ Humidity Response Characteristics: Humidification $\leq 20S$; Dehumidifying $\leq 40S$;
 - ⑨ Stability: $\leq 2\%RH/year$, Resist dewing;
 - ⑩ Accuracy(humidity): $\leq \pm 5\%RH$;
- Humidity Characteristics: (25°C, 1KHZ, AC1V, sine wave), Shown as the drawings



6. Standard Verification Conditions

- ① Temperature: at 25 °C Frequency : at 1 KHz (K.ohm) Voltage: The sine wave of AC 1V
- ② This part must be used by the LCR power source, cannot be used by the DC power source.
- ③ Using a split type humidity generator (GY-1)
- ④ Determination wire: 1 core shield wire
- ⑤ Avoid hard objects or fingers scratch or pollution the components surface
- ⑥ Avoid test in salt fog, corrosive gas, strong acid, strong alkali , organic solvents, alcohol and acetone, etc
- ⑦ The welding conditions (180 °C , 3S), should use warp soldering iron or tweezers for protection
- ⑧ Storage conditions: Temperature 0 °C - 40 °C , Humidity: 30% RH - 90% RH.

7. Stability Test:

Using at 60% RH the sensors humidity variation for basis. After finish all tests, the samples exposed to a room temperature and humidity for 24 hrs, the test data listed in the table. (for Reference)

Temperature Humidity Characteristics at 0°C~60°C (31KΩ)

	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
20%RH				2290	1822	1450	1063	780	571	418	328	258	210
25%RH		2100	1620	1250	942	710	523	385	301	235	202	173	143
30%RH	1543	1175	874	650	482	358	292	238	198	165	137	114	93
35%RH	832	612	465	353	286	232	187	150	128	109	89.2	73	60
40%RH	443	335	275	226	175	135	114	97	81.2	68	57.7	49	42.4
45%RH	262	210	166	131	112	95	78.6	65	55.6	47.5	40.8	35	30.7
50%RH	158	125	107.8	93	79.5	68	55.3	45	39.1	34	29.6	25.7	21.7
55%RH	103	89	76.1	65	52.9	43	37.1	32	27.4	23.5	20.9	18.5	15.4
60%RH	71.8	62	50.7	41.5	35.9	31	26.6	22.9	20.2	17.8	14.8	12.3	10
65%RH	48.3	41	35.1	30	25.1	21	18.6	16.5	13.8	11.6	9.6	7.9	6.45
70%RH	33.4	30	25.6	21.9	18.6	15.8	13.1	10.8	9	7.5	6.2	5.13	4.6
75%RH	24.4	21.5	18.3	15.6	13.1	11	9.32	7.9	6.42	5.21	4.43	3.76	3.18
80%RH	17.4	15.3	12.8	10.7	9.4	8.2	6.59	5.3	4.49	3.81	3.06	2.45	2.22
85%RH	12.2	10.2	8.98	7.91	6.54	5.4	4.58	3.89	3.15	2.55	2.14	1.79	1.57
90%RH	9.03	7.93	7.05	5.75	4.75	3.92	3.23	2.66	2.2	1.82	1.5	1.25	1.04

