

# Datasheet HR202L

## Humidity sensitive resistor

- Quick response
- Strong anti-pollution ability
- Strong stability
- Wide measuring range of temperature and humidity
- Precise measurement

## Summary

HR202L is a new type of humidity sensitive element using organic macromolecule materials. It has good features of wide humidity sensing range, quick response, and strong anti-pollution ability. The product is small and has characteristics, such as good sensitivity, excellent long-term stability, and no-need for cleaning with heat.

## Application

HR202L humidity sensitive resistor is applied on temperature and humidity meter for atmospheric environmental monitoring, industrial process control, agriculture, measuring instruments and other fields.

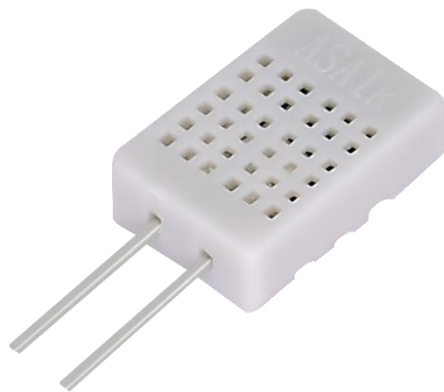


Figure 1. HR202L humidity sensitive resistor

## 1. Specification

Table 1. Technical indicators of HR202L

Measurement <sup>1</sup>	
Rated voltage	1.5V AC
Rated power	0.2 mW
Working frequency	500~2000 Hz
Operating temperature	0~60 °C
Operating humidity	Under 95% RH (Non dewing)
Hysteresis	≤ 2% RH
Response time	Moisture absorption ≤ 20 s Dehumidification ≤ 40 s
Stability	≤ 1 %RH/year
Humidity detection accuracy	≤ ± 5%RH
Relative humidity	
Humidity	60% RH
Central value	31 kΩ
Impedance value range	22~49 kΩ
Humidity detection accuracy	± 5% RH

<sup>1</sup> The Test conditions: the ambient temperature is 25 °C, the measured frequency is 1kHz, and the measured voltage is 1V AC as the reference. Before the test, place the humidity sensitive resistor in air at 25°C, 30%RH for 30 minutes.

Table 2. Relative humidity-Resistance characteristics (Unit: Ω)

Temperature \ Humidity	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	—	—	—	5.5 M	3.7 M	1.9 M	1.7 M	1.3 M	1.0 M	880 k	780 k	710 k	670 k
25% RH	—	7 M	4.0 M	3.0 M	2.4 M	1.3 M	1.1 M	880 k	700 k	610 k	530 k	460 k	410 k
30% RH	4.8 M	3.6 M	2.2 M	1.7 M	1.35 M	800 k	670 k	540 k	470 k	410 k	340 k	270 k	215 k
35% RH	2.1 M	1.5 M	1.0 M	800 k	530 k	380 k	340 k	300 k	250 k	210 k	170 k	150 k	130 k
40% RH	1.2 M	910 k	650 k	470 k	360 k	240 k	220 k	180 k	140 k	110 k	88 k	70 k	57 k
45% RH	700 k	500 k	380 k	280 k	210 k	155 k	125 k	100 k	78 k	64 k	50 k	41 k	34 k
50% RH	370 k	260 k	200 k	140 k	110 k	87 k	67 k	56 k	45 k	38 k	31 k	25 k	21 k
55% RH	190 k	140 k	110 k	84 k	63 k	49 k	39 k	33 k	27 k	24 k	19.5 k	17 k	14 k
60% RH	105 k	80 k	62 k	50 k	38 k	31 k	24 k	20 k	17.5 k	15 k	13 k	11 k	9.4 k
65% RH	62 k	48 k	37 k	30 k	26 k	22 k	15.5 k	13 k	11.5 k	10 k	8.6 k	7.6 k	6.8 k
70% RH	38 k	30 k	24 k	19 k	18.5 k	16 k	10 k	9.0 k	8.0 k	7.0 k	6.0 k	5.4 k	4.8 k
75% RH	23 k	18 k	15 k	12 k	13 k	10.5 k	7.2 k	6.2 k	5.6 k	4.9 k	4.2 k	3.8 k	3.4 k
80% RH	15.5 k	12.0 k	10.0 k	8.0 k	7.5 k	6.7 k	4.7 k	4.3 k	3.9 k	3.4 k	3.0 k	2.7 k	2.5 k
85% RH	10.5 k	8.2 k	6.8 k	5.5 k	4.8 k	4.0 k	3.3 k	3.1 k	2.8 k	2.4 k	2.1 k	1.9 k	1.8 k
90% RH	7.1 k	5.3 k	4.7 k	4.0 k	3.3 k	2.8 k	2.3 k	2.2 k	2.0 k	1.8 k	1.55 k	1.4 k	1.3 k



Figure 2. HR202L temperature and humidity characteristic curve

## 2. Dimension

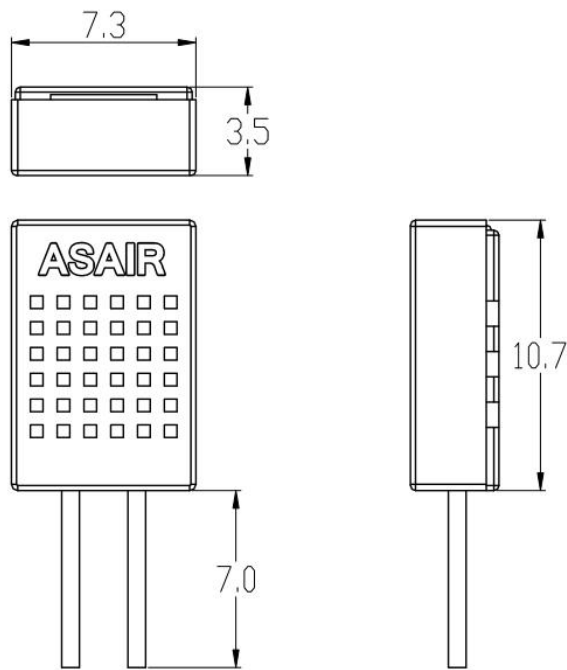


Figure 3. HR202L outline dimensions (unit: mm, tolerance:  $\pm 0.1$  mm)

## 3. Circuit diagram

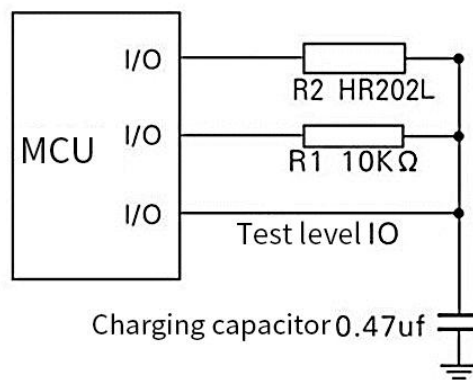


Figure 4. HR202L circuit diagram

## Warning and personal injury

Do not apply this product to safety protection devices or emergency stop equipment, and any other applications that may cause personal injury due to the product's failure. Do not use this product unless there is a special purpose or use authorization. Refer to the product datasheet and application guide before installing, handling, using or maintaining the product. Failure to follow this recommendation may result in death and serious personal injury.

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Description of warranty period

Accessories category	Shelf life
HR202L oxygen sensor	12 months

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