

## HW511 Hot-wire type gas sensor

HW511 type gas sensor through gas absorption on the metal oxide semiconductor generates hot conduction and electronics conduction change principal, the white coil resistor change when detecting gas concentration. HW511 consists detecting element and compensation element, both elements are placed in a wheatstone bridge circuit, when the combustible gas appears, the detecting element resistor reduces, bridge circuit voltage output changes, the voltage will increase according to the gas concentration increase, the compensation element refers to temperature compensation effect.

### Features

- High sensitivity, large output
- Fast primary stability time, quick response
- Remarkable reproducibility and reliability.
- Good selectivity, avoid smoke ethanol disturb
- Low consumption, miniature design

### Applications

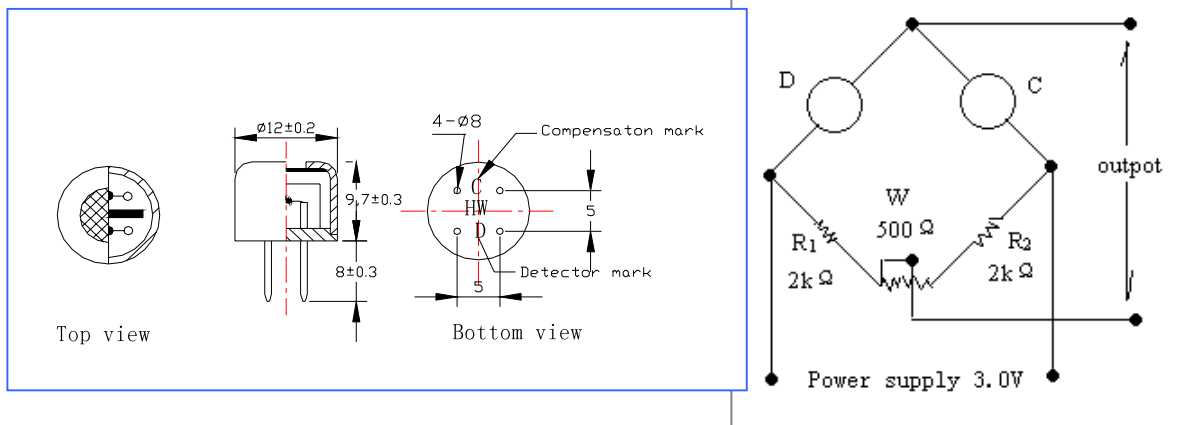
Domestic, Industrial spot natural gases, LPG, COAL GAS, alkyl etc combustible gas concentration detection.

- Combustible gas leak alarm
- Combustible gas detection



### Configuration

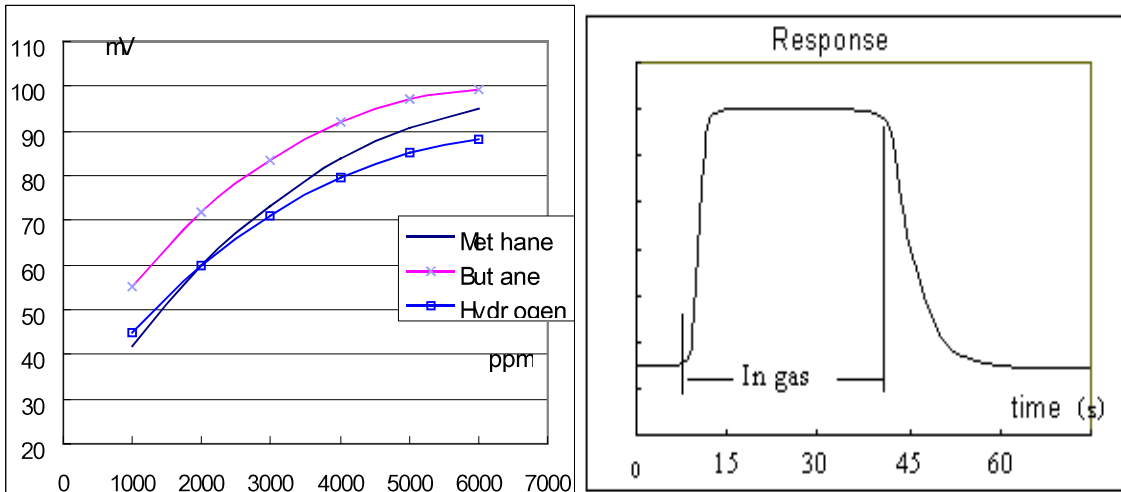
### Basical detecting circuit



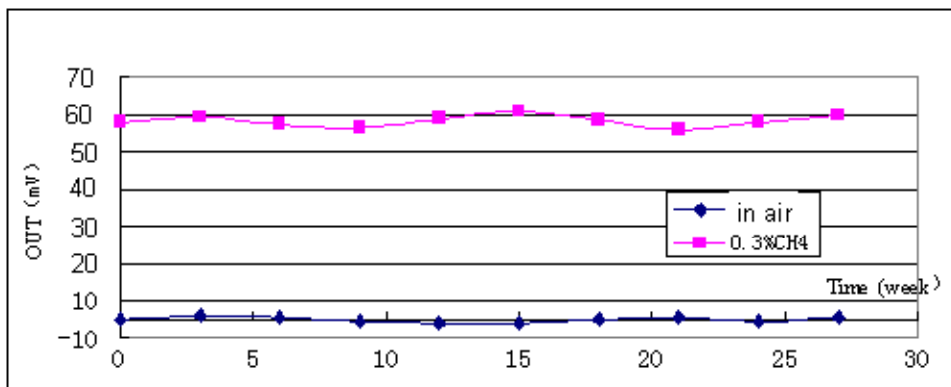
### Specifications

| Name                |               | Technical parameter                            |    |
|---------------------|---------------|--|----|
| Working voltage     |               | $3.0 \pm 0.1$                                  | V  |
| Working current     |               | $100 \pm 10$                                   | mA |
| sensitivity         | 0.3% Methane  | >60  | mV |
|                     | 0.2% Butane   | >60  | mV |
|                     | 0.1% Hydrogen | >40  | mV |
| Response Time (90%) |               | Less than 15sec                                |    |
| Resume time (90%)   |               | Less than 30sec                                |    |
| Working environment |               | $-20 \sim +60^{\circ}\text{C}$ Less than 95%RH |    |
| Size                |               | $\Phi 12\text{mm} \times 10\text{mm}$          |    |

## Sensitivity ,Response and Resume characteristics



## Long stability



The drift in air per year will be less than 10mV, In 0.3%CH<sub>4</sub> gas less than 10mV  
 Short time storage (in 2 weeks) need 30 minutes to stabilize, Long storage like 1 year  
 need at least 3 hours preheating to stabilize.

## Notification

- △ The sensor sensitivity need to calibrate termly.
- △ Try to avoid meeting the combustible gas up to 5% concentration or higher. If happened accidentally, please recalibrate the 0 point and sensitivity.
- △ When debugging, should strict to control the heating voltage or current, do not exceed 4.0V voltage to burn the sensor.
- △ For long period storage, do not put it in wet and corrosive environment.
- △ Shocking, falling, and mechanical destroying is prohibited