

# GAS SENSORS : TYPE AF52

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## METHANE (CH<sub>4</sub>) GAS SENSOR

### DESCRIPTION:

Methane gas sensor made with thick film sensing element.

### FEATURES:

- Constant heater voltage
- Tight resistance tolerance
- High sensitivity
- Suitable for systems employing pipe joint compound (Fernox, Hawk White)
- Typical applications include gas leak detection, gas appliances

### DATA:

#### Operating conditions:

**Operating temperature** ..... -10 to +55°C

**Storage temperature** ..... -30 to +60°C

**Load Resistor R<sub>L</sub>** ..... Variable

**Heater resistance** ..... 19W (nom)

**Rated power consumption P<sub>s</sub>** ..... <15mW

**Rated working voltage of circuit V<sub>c</sub>** .....

..... 5V d.c. or 5V rms a.c. (max 12V)

**Rated working voltage of heater** .....

..... 5 ±0.2V d.c.

..... 5 ±0.2 V rms a.c.

#### Parts and material:

**Sensing element** ..... Semi-conducting oxide

**Thick film heater** ..... Platinum

**Case** ..... Nylon 66

**Pin** ..... Nickel alloy

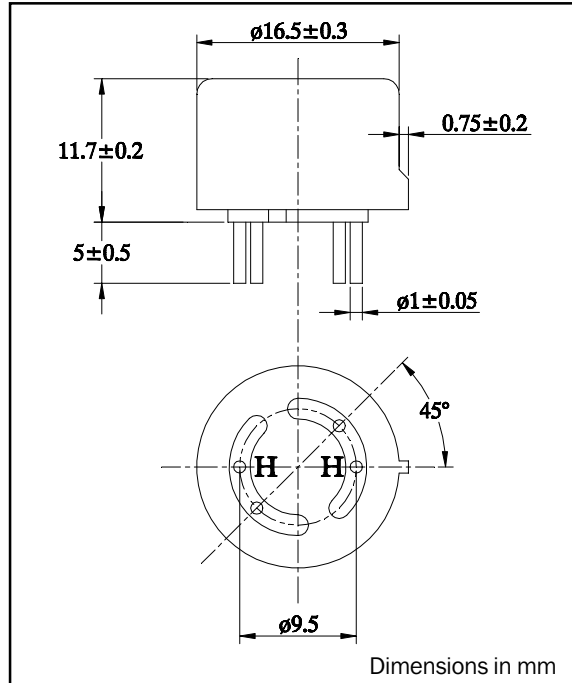
**Flame arrestor** .....

... Double 100-mesh stainless gauze (SUS316)

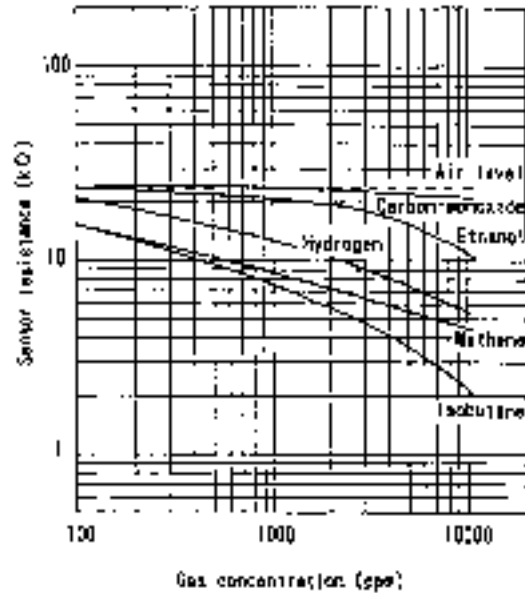
#### Sensitivity characteristics:

	Specification	Conditions
<b>Sensor resistance R<sub>gas</sub></b>	3.0k to 12k w	In 2000 ppm of methane in clean air
<b>Gas sensitivity R<sub>gas</sub>/R<sub>air</sub></b>	0.2 to 0.45	Resistance ratio at 2000ppm methane to clean air
<b>Power consumption</b>	690mW (max)	

### DIMENSIONS:



#### Typical gas sensitivity:



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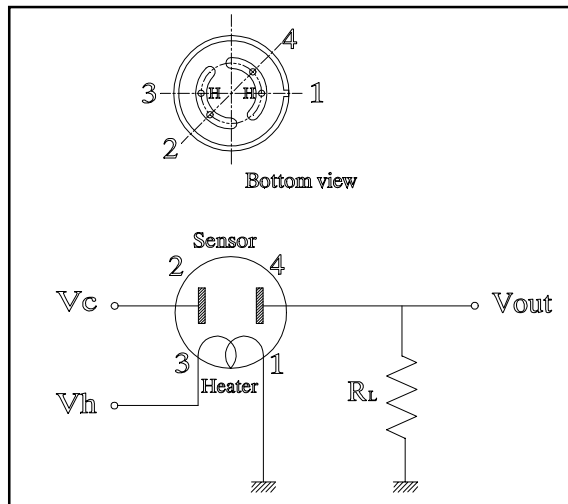
## METHANE (CH<sub>4</sub>) GAS SENSOR

**Mechanical characteristics:**

Test	Condition	Performance
<b>Vibration</b>	Frequency:	10 - 500 Hz
	Amplitude (10 - 50Hz):	2 mm
	Acceleration (50 - 500 Hz)	10G
	Reciprical scanning time:	5 min
	Test time: 2 hours each for X, Y and Z directions	
<b>Shock</b>	Acceleration:	100G
	Number of impacts:	5

**NOTES:**

**Pin allocation and standard test circuit:**



**Test conditions:**

**Atmosphere**

Clean air at 25± 2°C and 50±5% RH without noise gas.

**Circuit condition**

Vc (circuit voltage) ..... 5±0.05V

Vh (heater voltage) ..... 5±0.05V

Preheat time ..... 48 hours

**Test gas**

Methane ..... 2000ppm

**WARNING:**

Do not use if the case or wire netting is damaged, otherwise built-in heater may cause explosions or fires.  
 Do not disassemble or change any parts.  
 Use only within specified conditions.

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