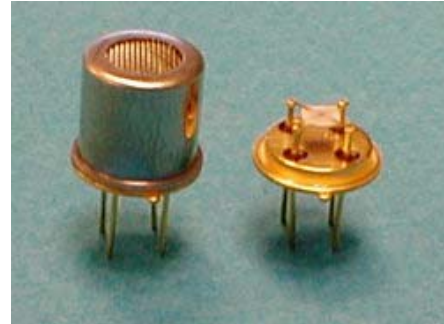


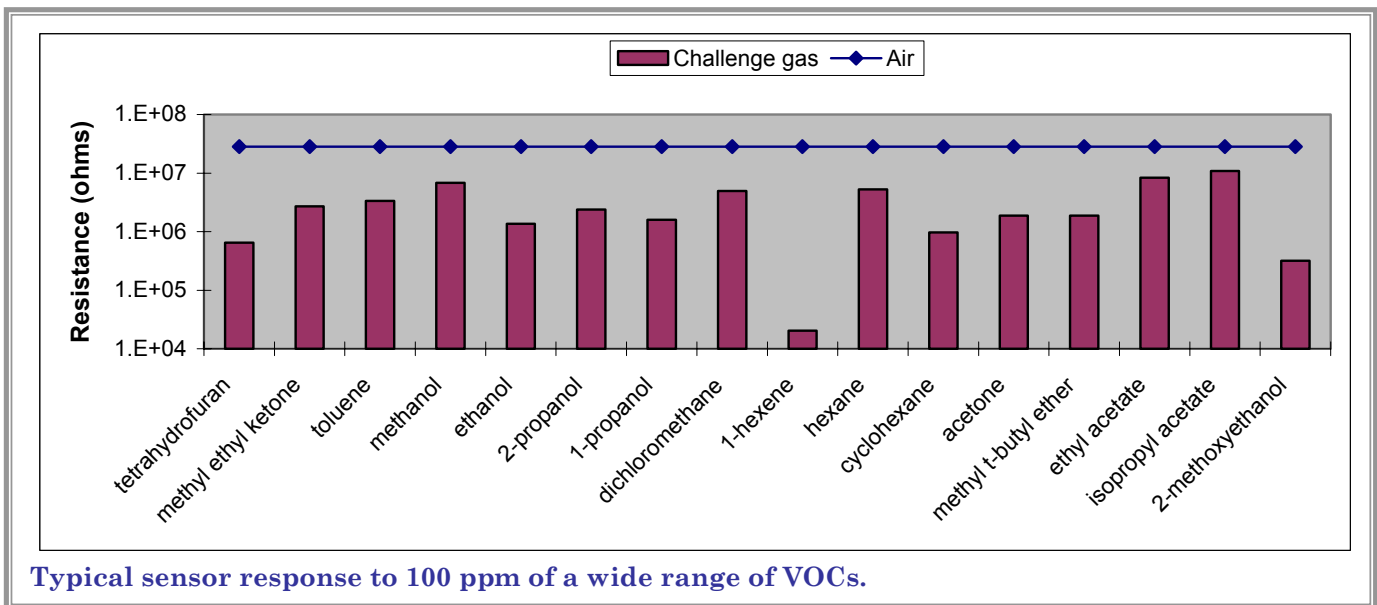
**SENSOR FEATURES:**

- High sensitivity to a wide range of VOCs.
- Non-specific: responds to many different organic vapors.
- Typical response time <1 minute to 90% full scale.
- Environmental temperature range of -20 to 50°C.
- Environmental humidity range of 0 to 90% RH, non-condensing.



**Sensor Response Characteristics**

The figure below shows typical response and selectivity data for sensors operated under laboratory conditions. Humidity level is ~21% RH.



**Electrical Characteristics**

The electrical properties below are typical for VOC Sensors. If the actual values differ the customer will be notified with the shipment. Circuits are available that will be preset to the correct values.

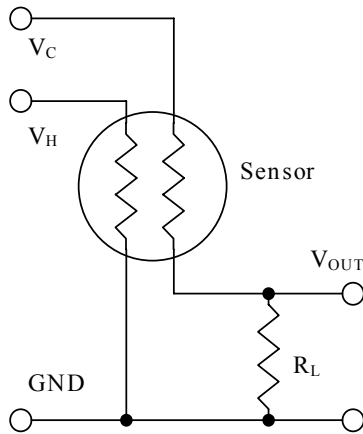
Property	Symbol	Value	Remarks
Heater Power Consumption	P <sub>H</sub>	~ 400 mW	At V <sub>H</sub> = 3.5
Heater Voltage	V <sub>H</sub>	3.5 VDC	T <sub>sensor</sub> ~150°C
Heater Resistance	R <sub>H</sub>	32 Ω ± 2 Ω	At room temperature
Sensing Voltage	V <sub>C</sub>	5.0 VDC	Recommended

### Circuitry

A transducer is available from Synkera to operate the sensor. This circuit, packaged on a 2" x 1.5" printed circuit board, is powered with 9 – 24 VDC. The transducer provides a 0 – 5 VDC output which can be adjusted for sensor offset and gain. The heater voltage is also adjustable. The circuit is set to the recommended values at the factory.

### Basic Measuring Circuit

The sensor can be operated using a simple voltage divider. This requires two voltage supplies: heater voltage ( $V_H$ ) and circuit voltage ( $V_C$ ).  $V_H$  is applied to the heater in order to maintain a constant, elevated temperature, for optimum sensing.  $V_C$  is applied to allow a measurement of the output voltage ( $V_{out}$ ) across a load resistor ( $R_L$ ).



Pins 1 and 3 on the TO-39 header are attached to the heater. Apply  $V_H$  across these pins.

Pins 2 and 4 on the TO-39 header are attached to the resistive sensor element. Connect these pins in the measuring circuit.

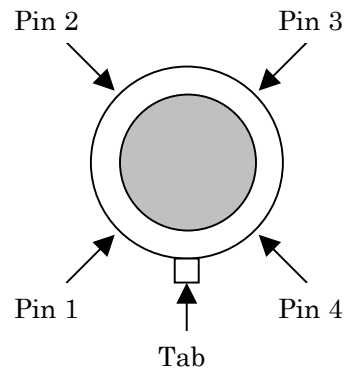
### Sensor Resistance Calculation

Sensor Resistance ( $R_s$ ) is calculated using the following formula:

$$R_s = \frac{V_C - V_{out}}{V_{out}} * R_L$$

### Sensor Pin Out

Top view of sensor



Synkera Technologies strives to be customer oriented. If you have a special application you would like to discuss, or questions you would like answered please contact us at [sensors@synkera.com](mailto:sensors@synkera.com).