# TGS 6810-C00 - for the detection of Methane and LP Gas

## Features:

* Linear output
* Sensitive to both methane and LP gas

## Applications:

* Residential LNG and LPG alarms
* Detectors for LNG and LPG

The **TGS6810-C00** catalytic type gas sensor, which can detect both methane and LP gas, has been developed for residential gas detection. Combining Figaro's extensive experience in catalyst materials technology with its advanced micro fabrication technology, Figaro can produce the most advanced compact catalytic sensors whose durability, stability, quick response, and linear output make them ideal for detecting many combustible gases.



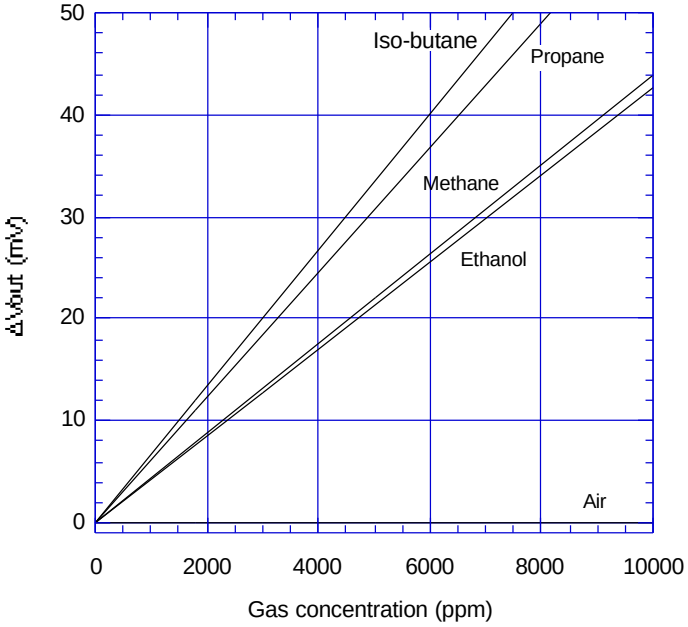
The figure below represents typical sensitivity characteristics, all data having been gathered at standard test conditions (see reverse side of this sheet). The Y-axis is indicated as sensor output sensitivity--ΔVout (mV):

ΔVout = Vout in gas - Vout in air

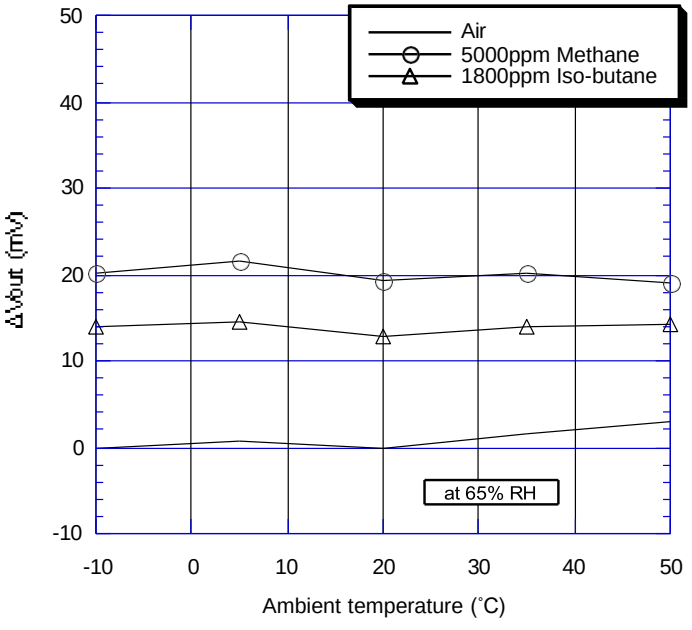
The figure below represents typical temperature dependency characteristics at 65%RH. Again, the Y-axis is indicated as sensor output sensitivity--ΔVout (mV):

ΔVout = Vout in gas - Vout in air at 20˚C

**Sensitivity Characteristics:**




**Temperature Dependency:**

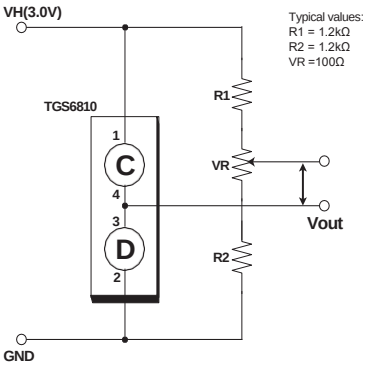



**IMPORTANT NOTE:** OPERATING CONDITIONS IN WHICH FIGARO SENSORS ARE USED WILL VARY WITH EACH CUSTOMER'S SPECIFIC APPLICATIONS. FIGARO STRONGLY RECOMMENDS CONSULTING OUR TECHNICAL STAFF BEFORE DEPLOYING FIGARO SENSORS IN YOUR APPLICATION AND, IN PARTICULAR, WHEN CUSTOMER'S TARGET GASES ARE NOT LISTED HEREIN. FIGARO CANNOT ASSUME ANY RESPONSIBILITY FOR ANY USE OF ITS SENSORS IN A PRODUCT OR APPLICATION FOR WHICH SENSOR HAS NOT BEEN SPECIFICALLY TESTED BY FIGARO.

## Basic Measuring Circuit:

The TGS6810 is comprised of two elements: 1) element (D) which is sensitive to combustible gases and 2) a reference element (C) which is not sensitive to combustible gases. These elements are installed into a "Wheastone Bridge". A variable resistor should be adjusted so that the bridge will produce a stable baseline signal when in an environmnet free of combustible gases.

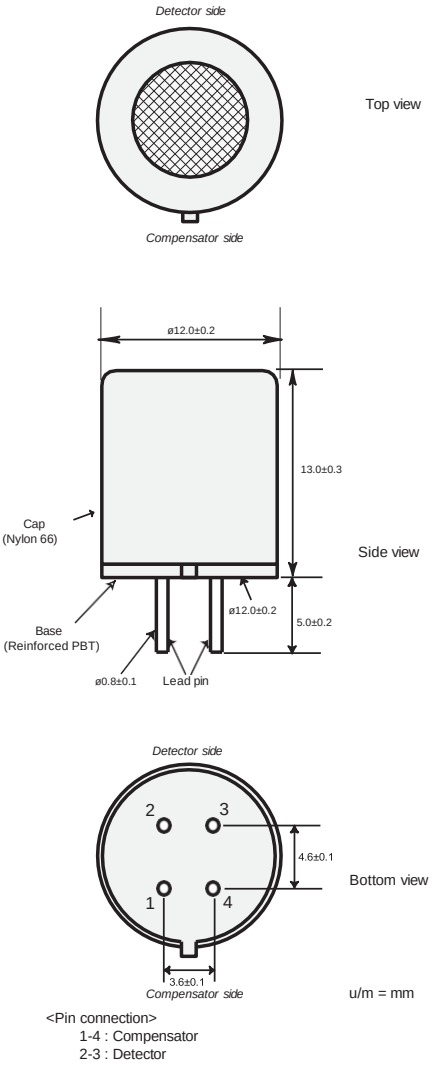
When combustible gases are present, they will be combusted on the detecting element, causing its temperature to rise. Accordingly the resistance of this element will increase. This results in an "out-of-balance" signal across the bridge and a corresponding change in output voltage which can be measured.




## Specifications

| | | | |
|---|---|---|---|
| Model number | | TGS 6810-C00 | |
| Sensing element type | | Catalytic | |
| Target gases | | Methane, propane, iso-butane | |
| Typical detection range | | 0~100%LEL of each gas | |
| Standard circuit conditions | Operating voltage | 3.0±0.1V AC/DC | |
| Electrical characteristics under standard test conditions | Heater current | 175mA (typical) | |
| | Heater power consumption | 525mW (typical) | |
| | Zero offset | -15 ~ +55mV | |
| | Output sensitivity (ΔVout) | methane | 12~24mV in 5000ppm |
| | | iso-butane | 8~16mV in 1800ppm |
| Standard test conditions | Test gas conditions | Methane/iso-butane in air at 20±2˚C, 65±5%RH | |
| | Circuit conditions | 3.0±0.05V AC/DC | |
| | Conditioning period before test | ≤30 sec. | |
| Operating conditions | | -10˚C~+50˚C, ≤95%RH (w/o dew condensation) | |
| Storage conditions | | -10˚C~+60˚C, ≤95%RH (w/o dew condensation) | |

## Structure and Dimensions:




<Pin connection>
1-4 : Compensator
2-3 : Detector

**All sensor characteristics shown in this brochure represent typical characteristics. Actual characteristics vary from sensor to sensor. The only characteristics warranted are those in the Specification table above.**


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