TGS6810-D00 Gas Sensor for Detecting Methane and LP

characteristic：

* linear output
* Long service life
* Low sensitivity to alcohol
* High sensitivity to both methane and LP

apply：

* Civil LNG and LPG alarms
* LNG and LPG detectors

The TGS6810-D00 is a catalytic combustion gas sensor designed to detect methane and liquefied petroleum gas (LPG), primarily developed for civilian use. Leveraging Feigaro's extensive expertise in catalytic material technology and advanced micro-manufacturing techniques, this cutting-edge compact sensor combines exceptional durability, stable performance, rapid response, and linear output characteristics. It stands as an ideal gas detection solution capable of identifying multiple combustible gases.

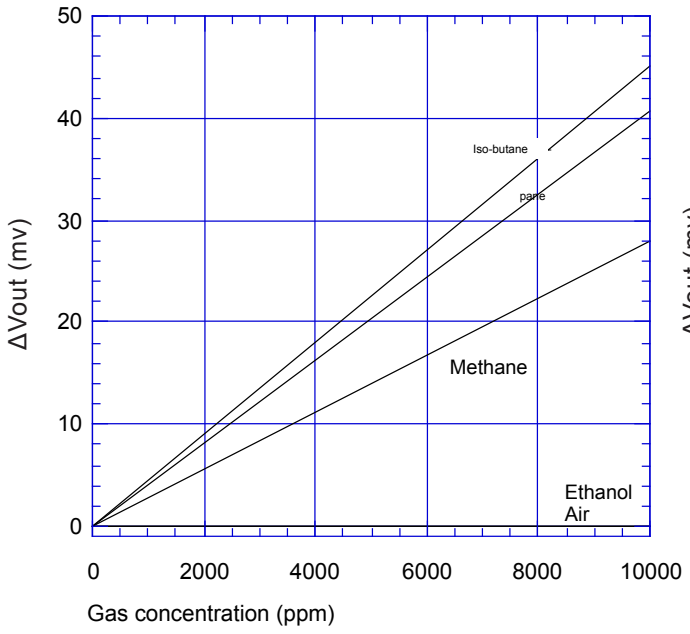
The TGS6810-D00 has an adsorbent in the cap, which is much less cross-sensitive to alcohol. In addition, the sensor has better tolerance to silicon compounds. The normal indoor environment is expected to have a service life of 10 years (based on actual data that has been stable for over 8 years).

Sensitivity characteristics:

The representative sensitivity characteristic curve is shown in the figure below under standard test conditions (see back).

The vertical axis indicates the output sensitivity of the sensor-

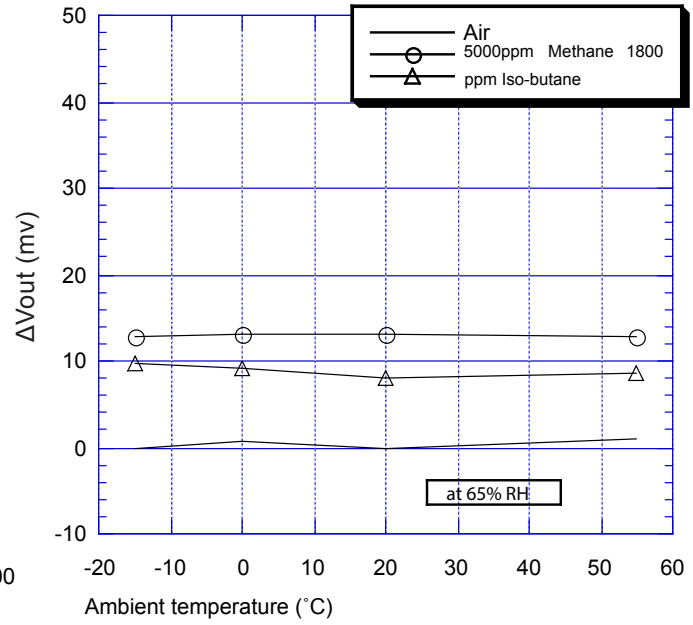
ΔVout (mV): ΔVout = Vout (in gas) - Vout (in air)>



temperature characteristic：

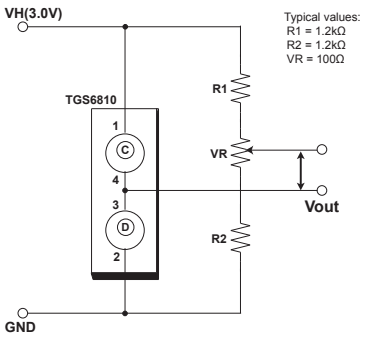
The figure below shows the representative temperature characteristic curve measured at 65%RH. The vertical axis represents the output sensitivity of the sensor-ΔVout (mV):

ΔVout=Vout (gas) -Vout(20˚C air)



Basic test circuit:

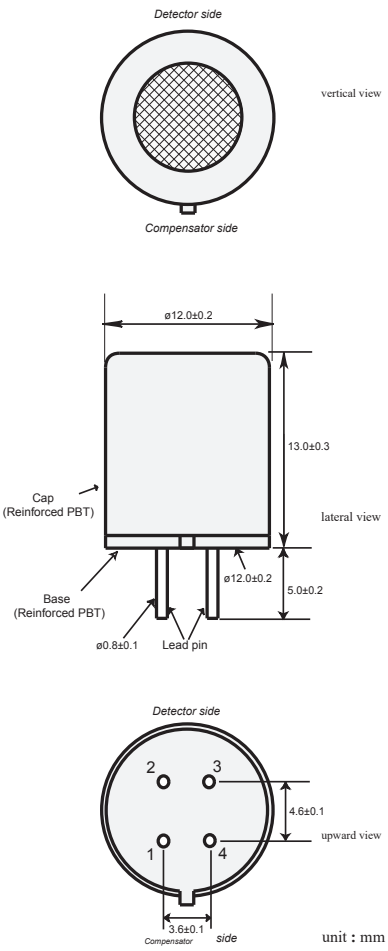
The TGS6810 consists of two elements: 1) a sensing element (D) highly sensitive to combustible gases; and 2) a reference element (C) insensitive to combustible gases. These elements are installed in a "balance bridge". In a free gas environment, the variable resistance can be adjusted to generate a stable reference signal from the bridge. When combustible gases burn, the temperature of the sensing element rises, causing its resistance to increase. Consequently, the unbalanced signal is transmitted through the bridge and converted into a measurable output voltage.



specifications：

model			TGS 6810-D00
Detection principle			Catalytic type
Object gas			Methane, propane, isobutane
Typical test range			0-100% LEL gases
Standard loop conditions	working voltage		3.0±0.1V AC/DC
Electrical characteristics under standard test conditions	Heater current		175mA (typical)
	Heater power consumption		525mW (typical)
	wandering of zero point		-15 ~ +55mV
	Output sensitivity (ΔVout)	methane	10~ 18mV at 5000ppm
		isobutane	5~11mV at 1800ppm
standard test conditions	Test gas conditions		Methane, isobutane in air 20±2. C, 65±5%RH
	Circuit conditions		3.0±0.05V AC/DC
	Pre-test debugging		≤30 sec.
going			-10. C~+50. C, ≤95%RH (no condensation)
maintaining requirement			-10. C~+60. C, ≤95%RH (no condensation)

Structure and size:



Pin connections:
1-4: Compensation elements
2-3: Detection elements

All sensor characteristics shown in this product introduction are typical characteristics, and the actual characteristics vary from sensor to sensor. The above characteristics table is the only guarantee.

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