TGS 822 - for the detection of Organic Solvent Vapors

Features:

* High sensitivity to organic solvent vapors such as ethanol
* High stability and reliability over a long period
* Long life and low cost
* Uses simple electrical circuit

Applications:

* Breath alcohol detectors
* Gas leak detectors/alarms
* Solvent detectors for factories, dry cleaners, and semiconductor

The sensing element of Figaro gas sensors is a tin dioxide (SnO₂) semiconductor which has low conductivity in clean air. In the presence of a detectable gas, the sensor’s conductivity increases depending on the gas concentration in the air. A simple electrical circuit can convert the change in conductivity to an output signal which corresponds to the gas concentration.

The TGS 822 has high sensitivity to the vapors of organic solvents as well as other volatile vapors. It also has sensitivity to a variety of combustible gases such as carbon monoxide, making it a good general purpose sensor. Also available with a ceramic base which is highly resistant to severe environments as high as 200°C (model# TGS 823).

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 resistance ratio (Rs/Ro) which is defined as follows:

Rs = Sensor resistance of displayed gases at various concentrations
Ro = Sensor resistance in 300ppm ethanol

The figure below represents typical temperature and humidity dependency characteristics. Again, the Y-axis is indicated as sensor resistance ratio (Rs/Ro), defined as follows:

Rs = Sensor resistance at 300ppm of ethanol at various temperatures/humidities
Ro = Sensor resistance at 300ppm of ethanol at 20°C and 65% R.H.

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.
Structure and Dimensions:

Pin Connection and Basic Measuring Circuit:
The numbers shown around the sensor symbol in the circuit diagram at the right correspond with the pin numbers shown in the sensor’s structure drawing (above). When the sensor is connected as shown in the basic circuit, output across the Load Resistor (V_{RL}) increases as the sensor’s resistance (Rs) decreases, depending on gas concentration.

Standard Circuit Conditions:

Electrical Characteristics:

Standard Test Conditions:
TGS 822 complies with the above electrical characteristics when the sensor is tested in standard conditions as specified below:

For information on warranty, please refer to Standard Terms and Conditions of Sale of Figaro USA Inc.