

EM4260 - Evaluation Module for TGS4260

Description:

The EM4260 evaluation module is designed to perform the testing and evaluation of the potentiostatic electrolysis-type oxygen sensor TGS4260. Output voltage (V_{OUT}) from the module corresponding to oxygen concentration simplifies and facilitates evaluation of the characteristics of the TGS4260 sensor.

Features:

- * Converts sensor output current to voltage output
- * Stable operation with noise control circuit
- * Compact design

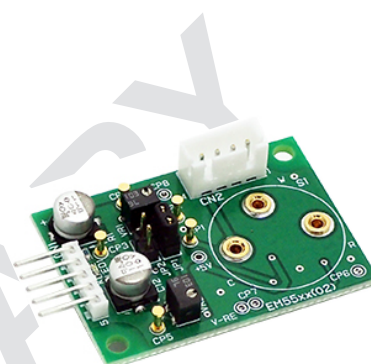
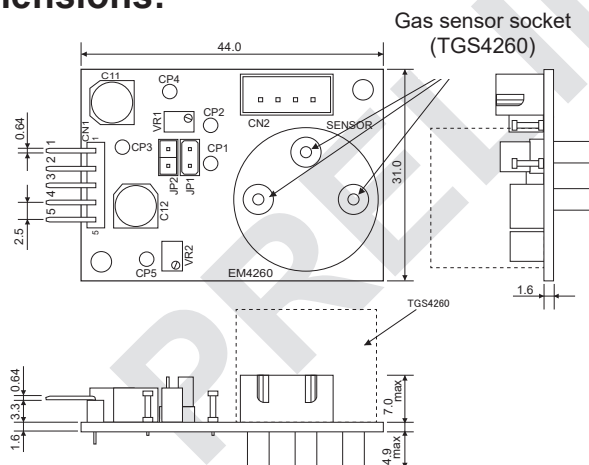
Operation:

The output current generated from the TGS4260 sensor (*1) corresponding to oxygen concentration is converted into output voltage. A linear relationship exists between output voltage and oxygen concentration within the range defined as the specifications. By measuring in advance the output voltage in ambient air of 20.9 vol.% O_2 or in a known oxygen concentration, oxygen concentration can be calculated from the measured output voltage values. (*2)

*1 For more detailed of the specifications of TGS4260 sensor, refer to Product Information for TGS4260.

*2 The main function of this module is to simply convert sensor output current into voltage output without temperature compensation.

Dimensions:



CN1 Pin Connections

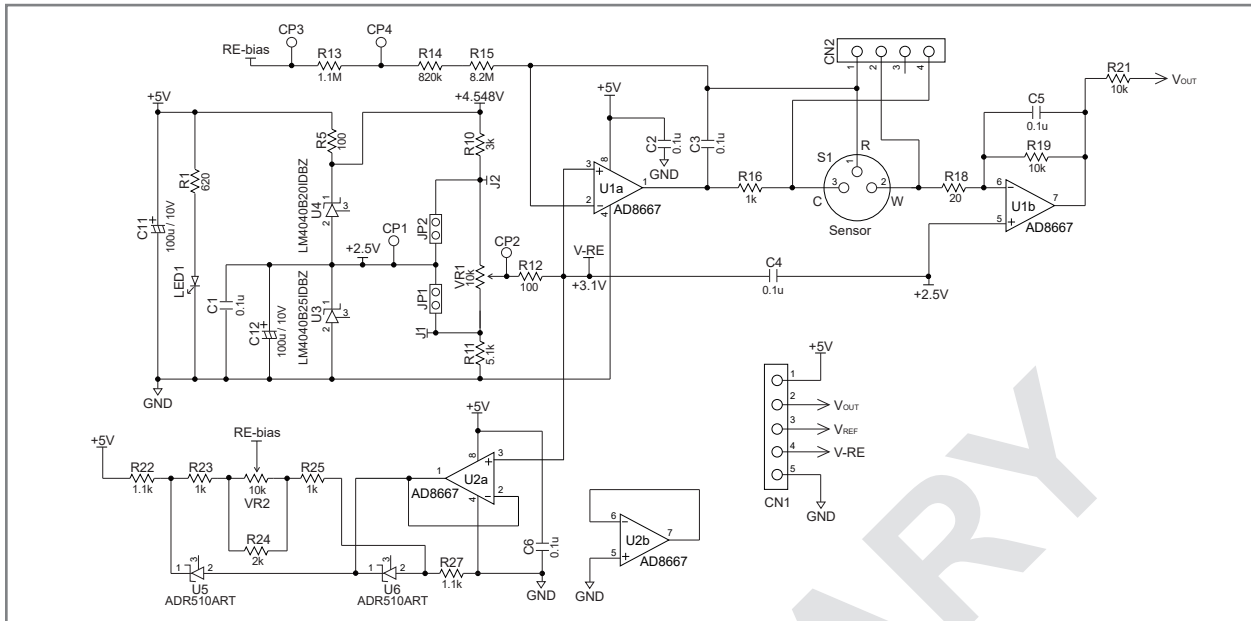
Pin #	Name	Description
1	V_{IN}	Input voltage 5.0±0.2V DC
2	V_{OUT}	Output voltage
3	V_{REF}	For monitoring reference potential
4	V_{-RE}	For monitoring RE potential
5	GND	Ground

* TGS4260 sensor is to be put in the sensor socket as shown in the above photo. Alternatively, connect the cable harness connected to the sensor to CN2.

* Suggested female connectors mating to the 5-pin connector (JST MB5P-90S): JST XHP-5P or JST 05JQ-BT

* Suggested female connector mating to the 4-pin connector (JST B4B-XH-A): JST XHP-4P

Schematic Diagram:



Specifications:

Item	Specification
Product Name	Evaluation module for TGS4260
Model No.	EM4260
Target gas	Oxygen
Detection range	0 ~ 25 vol. %
Input voltage range(V_{IN})	5.0 \pm 0.2VDC
Current consumption	\leq 2.0mA
Operating conditions	-40~60°C, \leq 95%RH (no condensation) For more details of operating conditions of the sensor, refer to Product Information for TGS4260.
Output voltage(V_{OUT})	In ambient air with 20.9 vol. % O ₂ : 1.45V(typical) In zero vol. % O ₂ : 2.5+0/-0.02V(typical) * Under standard test conditions of 25°C, 50%RH and 1013 hpa * Bias voltage application time: 2 hours or more
Output amplification factor	1.0 \times 10 ⁴
Bias voltage adjustment and Jumper pin connections	Factory adjusted to -600mV with JP1 connected and JP2 open

Notes:

1. This module is designed for evaluation of the TGS4260 sensor only. Please do not use this module for any other purpose.
2. If excessive voltage or reverse voltage is applied to the module, the module or the sensor may be damaged.
3. Please do not touch or adjust VR1, VR2, JP1, and JP2. These items have been adjusted so that standard driving conditions are applied to the sensor. If they are changed, the sensor may be damaged.
4. The input impedance of equipment connected to the CN1 should be 1M Ω or greater in order to ensure precise data acquisition.

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