



Hydrogen Gas Sensor

(Model: MEv-GH01)

Manual

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Zhengzhou Winsen Electronics Technology CO., LTD

MEv-GH01 Hydrogen Gas Sensor

Profile

MEv-GH01, fuel cell type sensor, detects gas concentration by measuring current based on the electrochemical principle, which utilizes the electrochemical oxidation process of target gas on the working electrode inside the electrolytic cell, the current produced in electrochemical reaction of the target gas are in direct proportion with its concentration while following Faraday law, then concentration of the gas could be detected by measuring value of current.



Features

- * Low consumption
- * High precision
- * High sensitivity
- * Wide linear range
- * Good anti-interference ability
- * Excellent repeatability and stability

Main Application

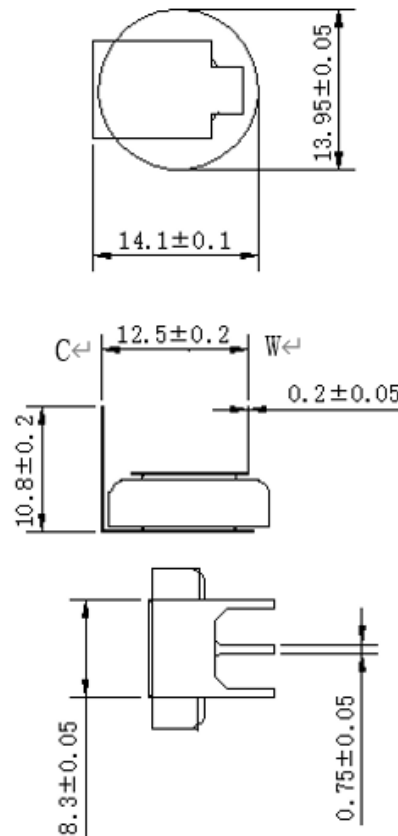
Widely suitable for hydrogen concentration detection in commercial, energy storage power stations, vehicles, etc..

Technical Parameters

Table 1

Item	Data
Detecting gas	Hydrogen (H ₂)
Range	0~2000ppm
Max Measurement Limit	5000ppm
Sensitivity	(0.5~1.5)μA/ppm
Resolution	1ppm
Response time (T ₉₀)	<30S
Load resistance (recommended)	(500/1K/2K) Ω
Repeatability	<5% of output value
Output Linearity	Linearity
Temperature Range	-10℃~50℃(Frequently) -40℃~70℃(Occasionally)
Humidity Range	15%~90% RH
Pressure Range	Standard Atmospheric Pressure ±10
life	10 years

Figure 1: Product structure diagram



Basic Circuit

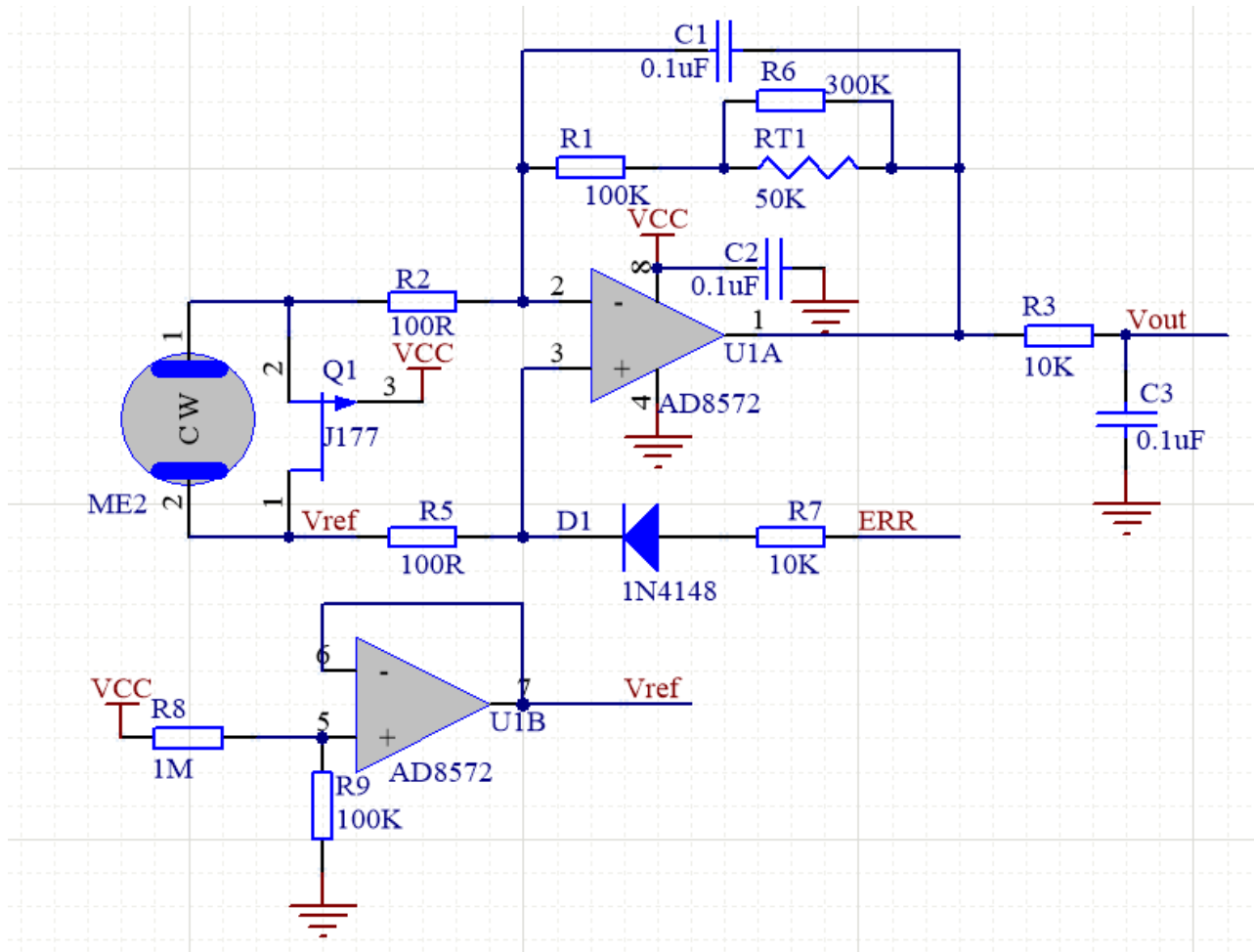


Figure 2: MEv-GH01 Test Circuit

Characterization

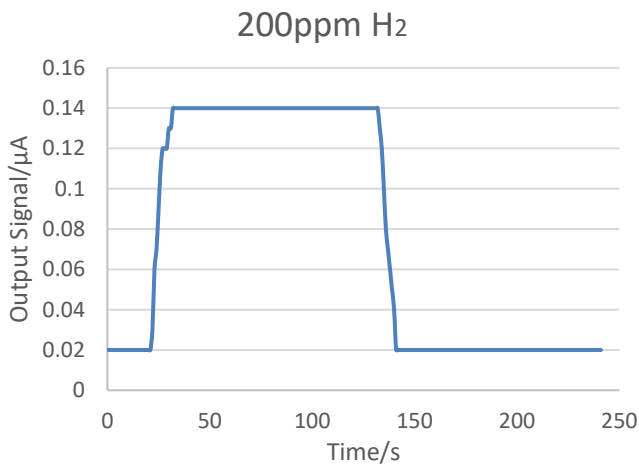


Figure 3: Sensitivity, response recovery of the sensor

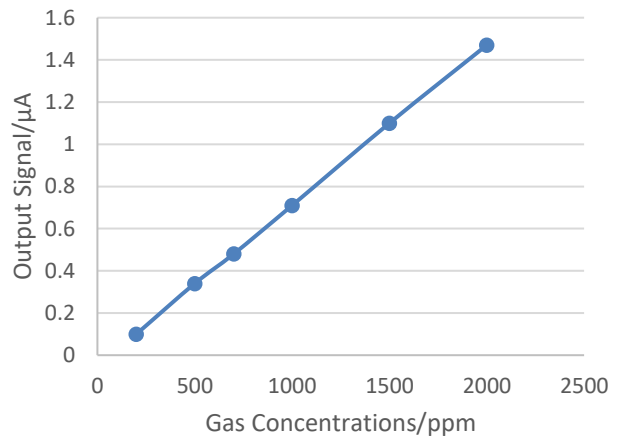


Figure 4: Sensor Linearity Curve

Cross-sensitivity:

The MEv-GH01 sensor can respond to gases other than the target gas. For reference, the response characteristics of the sensor to several common interfering gases are listed in the table below. The data in the table shows the typical response of a gas at a given concentration.

Table 2: Cross-Interference characteristics

Gas	Concentration	MEv-GH01
H2S	15ppm	4ppm
SO2	5ppm	0ppm
CO	200ppm	30ppm
NO	35ppm	10ppm
NO2	5ppm	0.5ppm
CL2	10ppm	0ppm
HCL	5ppm	0ppm
C2H4	100ppm	85ppm

Cautions

- Solderable leads for installation, no solder contact with the sensor is allowed;
- Aging time of not less than 48 hours before use;
- Do not disassemble the sensor;
- Avoid contact with organic solvents (including silicone rubber and other adhesives), paints, chemicals, fuel oils and highly concentrated gases;
- All electrochemical sensors must not be completely encapsulated in resin material or submerged in an oxygen-free environment for extended periods of time, as this may impair the performance of the sensor;
- All electrochemical sensors must not be used in environments containing corrosive gases for extended periods of time, as corrosive gases can damage the sensors;
- Gas zero determination shall be performed in a clean atmosphere;
- Avoid frontal vertical air inlet when testing and applying sensors;
- The air inlet holes of the sensor must not be obstructed or contaminated;
- The sensor must not be subjected to excessive impact or vibration;
- Do not use the sensor if the housing is damaged or deformed;
- The initial state of the sensor is slow to recover after prolonged use in a highly concentrated gas environment;
- The sensor should be stored with the working electrode and counter electrode in a short-circuited state;
- It is prohibited to encapsulate the sensor with hot-melt adhesive or sealant with a stable curing temperature above 80°C;
- It is prohibited to store and use the sensor for a long period of time in highly concentrated alkaline gases.