Electrochemical
Hydrogen Sulfide Sensor
（Model：MEu-H2S）

Manual

Version:1.0

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Zhengzhou Winsen Electronic Technology Co., Ltd

Statement

Thanks for purchasing our product. In order to let customers use it better and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. The data provided in this manual is obtained under the conditions of 20℃, 50%RH and 1atm. This data is the data obtained by the test system of Winsen in the initial stage after the manufacture of the sensor. This data is for reference only.

If users disobey the terms or remove, disassemble, change the components inside of the sensor, we shall not be responsible for the loss.

The specific such as color, appearance, sizes &etc, please in kind prevail.

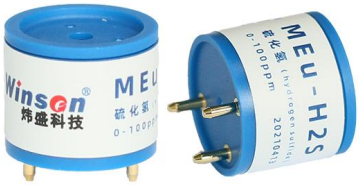
We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.

Zhengzhou Winsen Electronics Technology CO., LTD

MEu-H2S Hydrogen Sulfide Gas Sensor

Describtion



The MEu-H2S sensor is a fuel cell sensor. Hydrogen Sulfide and oxygen undergo a corresponding oxidation-reduction reaction on the working electrode and counter electrode and release charges to form a current. The current generated is proportional to the concentration of Hydrogen Sulfide and follows Faraday's law. The size can determine the concentration of Hydrogen Sulfide.

Features

* Excellent repeatability and stability

Application

Carbon monoxide detection in industrial and environmental fields.

Portable Hydrogen Sulfide detection instrument

Fixed point Hydrogen Sulfide detector

Technical parameter Table 1

Item	Parameter
Detection gas	Hydrogen Sulfide(H2S)
Measurement Range	0～50ppm
Max Range	200ppm
Sensitivity	（45±15）nA/ppm
Response time（T_{90}）	＜15S
Zero point output (in clean	＜±2ppm(Equivalent CO)
Zero drift（-40℃～ + 50℃）	＜ + 10ppm(Equivalent CO)
Repeatability	＜±2% output value
Linearity	Within ±5%
Stability	＜2%

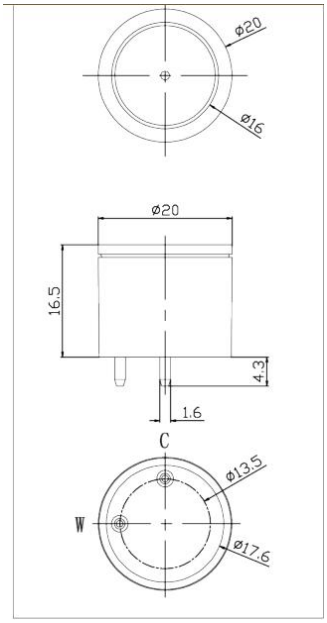


Figure 1: Sensor structure diagram;Unit:mm,Error±0.15mm

Working Environment Table 2

Item		Parameter
Range of working temperature	Continue working	-20℃～ + 40℃
	Intermittent working	-40℃～ + 55℃
Working humidity range		15%RH～ 90%RH(No condensation)
Working pressure range		1atm±10%

Lifespan Table 3

Item	Parameter
Long-term output drift	＜20%/Year
Recommended storage environment	+10℃～ + 30℃
Expected service life	2 Years(in the air)
Storage time	Original package≤6 months

Cross interference

In addition to the target gas, the MEu-H2S sensor also responds to other gases. The data in the table are the typical response of common interfering gases at a given concentration and the equivalent value of Hydrogen Sulfide. The sensor also responds to certain gases not listed in the table below, and the sensor and equipment should be used according to the actual application scenario.

Table 4 Cross Interference Data Sheet

Gas	Concentration（ppm）	Equivalent H2S concentration(ppm)
CO	200	0.5
CL2	10	0.7
C2H4	400	0.3
H2	100	16
C2H5OH	1000	0.3
NH3	50	-0.3
SO2	20	1.6
PH3	20	14
CH2O	10	2.5
C6H6	100	0.2
CH3OH	200	0.15

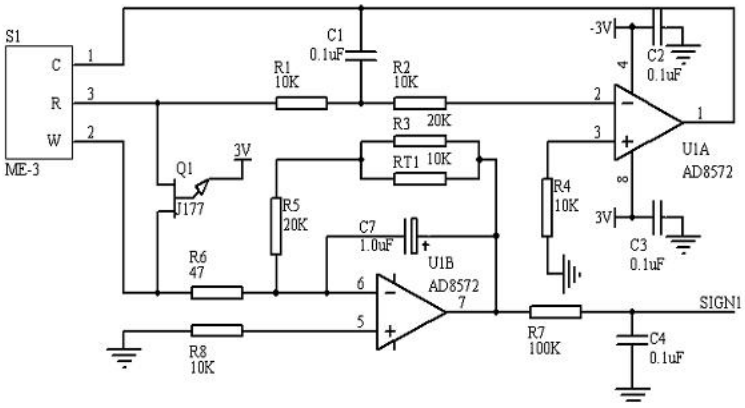
Cautions

- The pins(sockets) connector provided by the manufacturer should be used during installation, and direct welding of the tube pin is prohibited;
- The aging time before use is not less than 48 hours；
- Before using the sensor (portable meter) and in use (fixed point detector), confirm that it is in a normal state;
- Long-term use in an over-range high-concentration gas environment can cause damage to the sensor;
- The pin of the tube must not be broken or bent;
- The sensor must not be subjected to excessive shock or vibration;
- Do not disassemble the sensor at will. Disassembling the sensor will cause electrolyte leakage and cause harmful consequences;
- Damage to the casing will cause liquid leakage, do not use in this case;
- Avoid contact with organic solvents (including silicone rubber and other adhesives), coatings, pharmaceuticals, fuel oils and high-concentration gases;
- All electrochemical sensors cannot be completely encapsulated with resin materials or immersed in an oxygen-free environment, otherwise the performance of the sensor will be damaged;
- It is forbidden to encapsulate the sensor with hot melt adhesive or sealant whose curing temperature is higher than 80℃;
- All electrochemical sensors cannot be used or stored in an environment containing corrosive gas, which can damage the sensor;
- The sensor intake passage must not be blocked or polluted;
- When the sensor is not in use, the two poles need to be short-circuited to prevent electrode polarization;

Zhengzhou Winsen Electronics Technology Co., Ltd
Add.: NO.299 Jin Suo Road, National Hi-Tech Zone, Zhengzhou, 450001 China
E-mail:sales@winsensor.com
Website: www.winsen-sensor.com

Attachment

Attached 1 schematic diagram of sensor application circuit



Attached 2 typical curves of sensor characteristics

Figure 1: The sensitivity and response recovery of the sensor

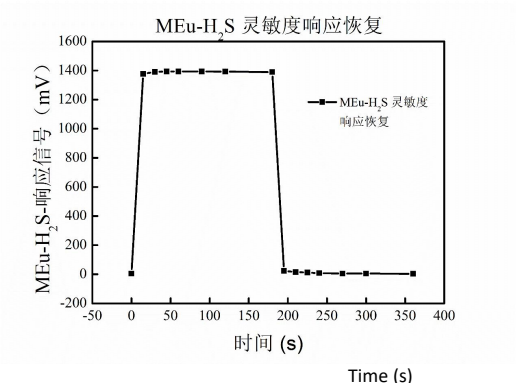


Figure 2: Sensor linearity curve

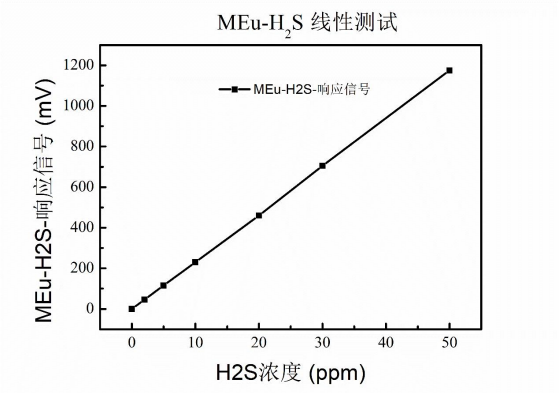


Figure 3: The output of the sensor at different temperatures

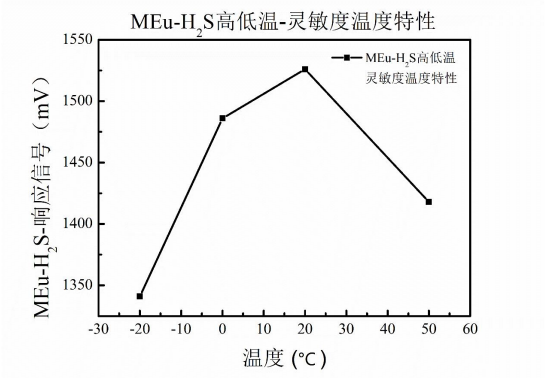


Figure 4: The zero point output of the sensor under different temperature conditions