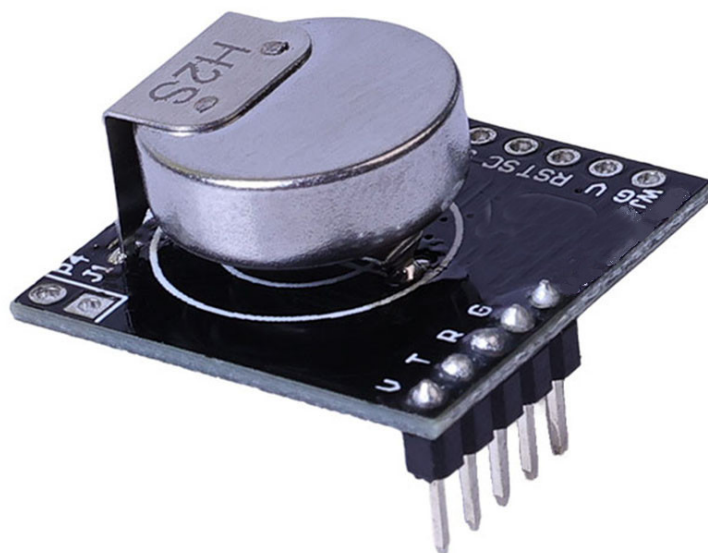


# **H2S-5000F TX**

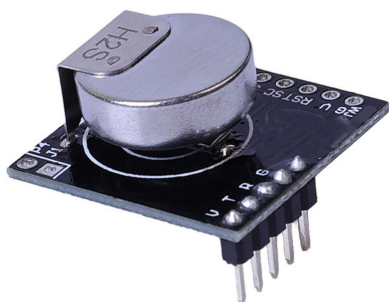
## **Hydrogen Sulphide**

## **Digital Transmitter Module**



## Introduction

The H<sub>2</sub>S-5000F TX Hydrogen Sulphide module combines our selective fuel cell H<sub>2</sub>S sensor with highly accurate advanced electronic control technology, converting H<sub>2</sub>S concentration into ppm. The module provides advantages of precision measurement, long-service life and ability to work under high temperatures. The module comes precalibrated and ready to integrate directly into systems.



## Key Features

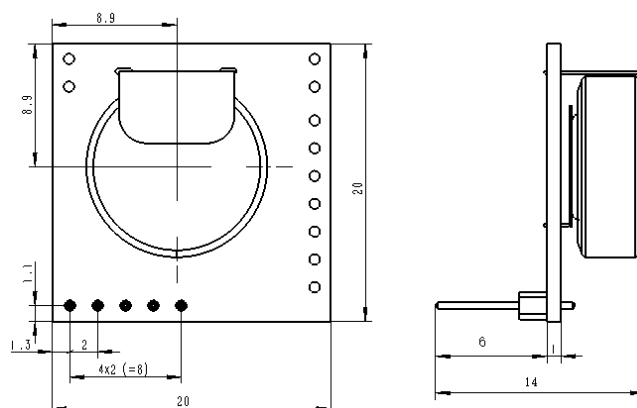
- Mini size ideal for low power applications
- Long lifetime technology of 15 years
- High sensitivity, fast response
- Selective detection, high precision
- No risk of leakage
- Wide temperature range from -40°C to +125°C

## Typical Applications

- Industrial Detection & Safety
- Portable instruments
- Energy Storage Systems
- Li battery factories & warehouses
- Electric vehicles
- Wearable electronics
- Monitoring in Battery Rooms
- Environmental Monitoring
- Process Monitoring
- Energy Engineering

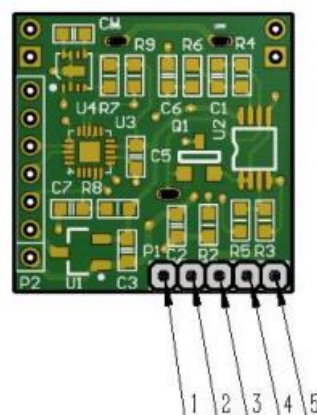
## Dimensions

All dimensions are in millimetres mm.



## Pin Outputs

PIN	DEFINITION
Pin 1	NC
Pin 2	GND
Pin 3	RXD (0~3.3V )
Pin 4	TXD( 0~3.3V )
Pin 5	Vin (5V)



## Technical Specifications

MODEL	H2S-5000F TX, Part No: 2112B60050001
Detection Principle	Micro fuel cell
Detectable Gas	H <sub>2</sub> S
Detection Range	0-5000ppm
Maximum Overload	6000ppm
Input Voltage	4.5 - 6.0V
Response Time (T90)	< 90 seconds
Resolution	20ppm
Operating temperature range	-40°C to +125°C
Operating Humidity Range	10% — 90%RH (non-condensing)
Expected Operating Lifetime	15 years in air
Warranty Period	24 months from manufacture date
Weight	6g

## Communication Protocol

### ➤ General Settings

The Module uses TTL serial communication.

Communication configuration parameters are:

Baud rate	9600
Data bits	8 bits
Stop bit	1 bit
Parity bit	None

### ➤ Communication Commands

There are two communication types: active upload type and Q&A type. The default type is active upload and it sends gas concentration once every second.

Commands are as follow:

0	1	2	3	4	5	6	7	8
Start	Gas	Unit ppm	No decimal byte	Concentrati on (High byte)	Concentration (low byte)	Full range (high byte)	Full range (low byte)	Check sum
0xFF	H2S=0x17	Ppm=0x04	0x00	0xFF	0xFF	0x07	0xD0	0xFF

Gas concentration = concentration (high byte)\*256 + concentration (low byte)

**Switch to Q&A mode:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Switch command	Q&A	Reserved	Reserved	Reserved	Reserved	Checksum
0xFF	0x01	0x78	0x41	0x00	0x00	0x00	0x00	0x46

**Switch to active upload mode:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Switch command	Active upload	Reserved	Reserved	Reserved	Reserved	Checksum
0xFF	0x01	0x78	0x40	0x00	0x00	0x00	0x00	0x47

**To read gas concentration:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Command	Reserved	Reserved	Reserved	Reserved	Reserved	Checksum
0xFF	0x01	0x86	0x00	0x00	0x00	0x00	0x00	0x79

**To return:**

0	1	2	3	4	5	6	7	8
Start	Command	Reserved	Reserved	Reserved	Reserved	Concentration (High byte) (ppm)	Concentration (low byte) (ppm)	Checksum
0xFF	0x86	0x00	0x00	0x00	0x00	0xXX	0xXX	0xXX

Gas concentration = concentration (high byte)\*256 + concentration (low byte)

**Checksum calibration /**

\*\*\*\*\*

\*Function name: unsigned char FucCheckSum(uchar \*i,uchar ln)

\*Function description: checksum calibration[Take Not(Byte1+Byte2+...Byte7) +1]

\*Note: Take Not(Byte1+Byte2+...ByteX (X>2)

\*\*\*\*\*/ unsigned char

FucCheckSum(unsigned char \*i, unsigned char ln)

{

    unsigned char

j, tempq=0; i+=1;

for(j=0; j<(ln-2); j++)

{

    tempq+=\*i;

    i++;

}

tempq=(~tempq)

+1; return(tempq);

}

## Notes

- Avoid changing or moving the sensor on the module.
- Avoid moving or changing electronic elements on PCB.
- Avoid exposure to organic vapours, organic solvents and high gas concentrations.
- Protect from excessive vibration and shock.
- See Operating Notes for more details.

By the nature of the technology used, any sensor can potentially fail to meet specification without warning. Euro-Gas makes every effort to ensure reliability of all sensors but where life safety is a performance requirement of the product and, where practical, Euro-Gas recommends that all gas sensors and instruments using sensors are checked for response to gas before use.

The data contained in this document is believed to be accurate and reliable. The data given is for guidance only. Euro-Gas Management Services Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this datasheet or the information contained in it. Customers should test the sensors under their own conditions to ensure that the sensors are suitable for their own requirements and in accordance with the plans and circumstances of the specific project and any standards or regulations pertaining to the country in which the sensors will be utilised. Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time. This datasheet is not intended to form the basis of a contract and in the interest of product improvement, Euro-Gas reserves the right to alter design features and specifications without notice. 2509

