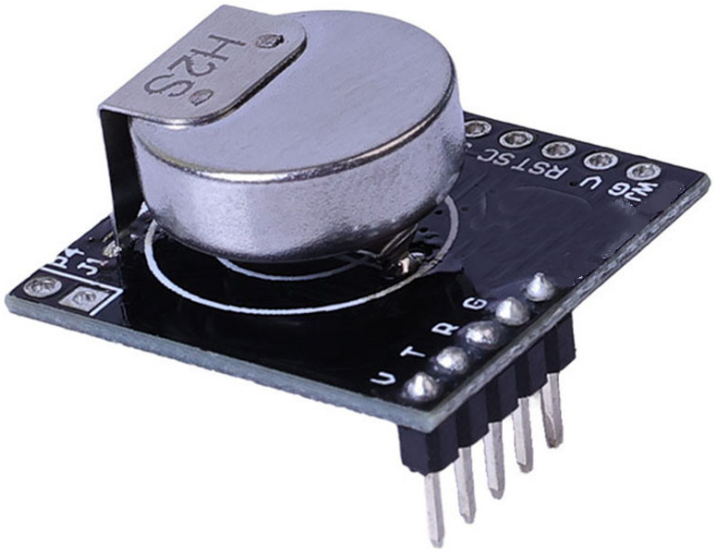
H2S-5000F TX
Hydrogen Sulphide
Digital Transmitter Module



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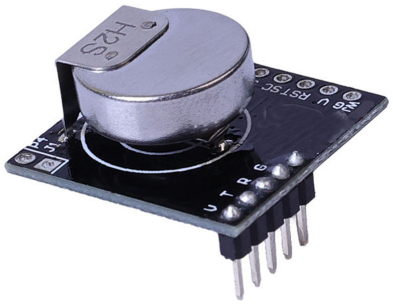
Introduction

The H_2S-5000F TX Hydrogen Sulphide module combines our selective fuel cell H_2S sensor with highly accurate advanced electronic control technology, converting H_2S 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

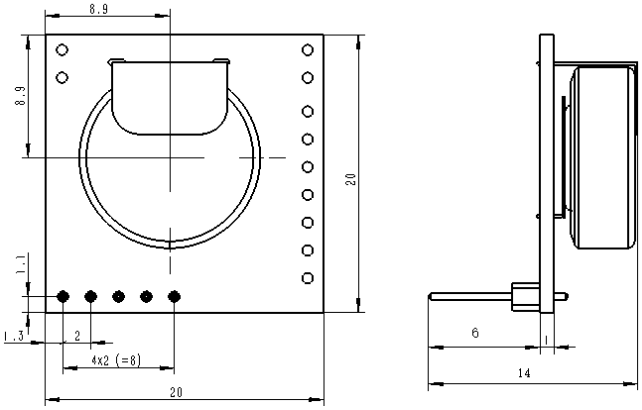
- Mini size ideal for low power applications
- Long lifetime technology of 15 years
- High sensitivity, fast response
- Selective detection, high precision
- No risk of leakage
- Wide temperature range from -40°C to +125°C

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

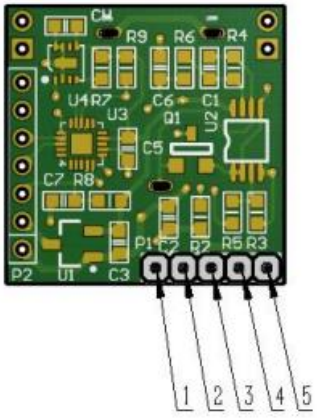
Dimensions

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_2S
Detection Range	0-5000ppm
Maximum Overload	6000ppm
Input Voltage	4.5 - 6.0V
Response Time (T90)	< 90 seconds
Resolution	20ppm
Operating temperature range	-40℃ to +125℃
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	Concentration (High byte)	Concentration (low byte)	Full range (high byte)	Full range (low byte)	Check sum
0xFF	H2S=0x17	Ppm=0x04	0x00	0xXX	0xXX	0x07	0xD0	0xXX

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,ucharln)
*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.