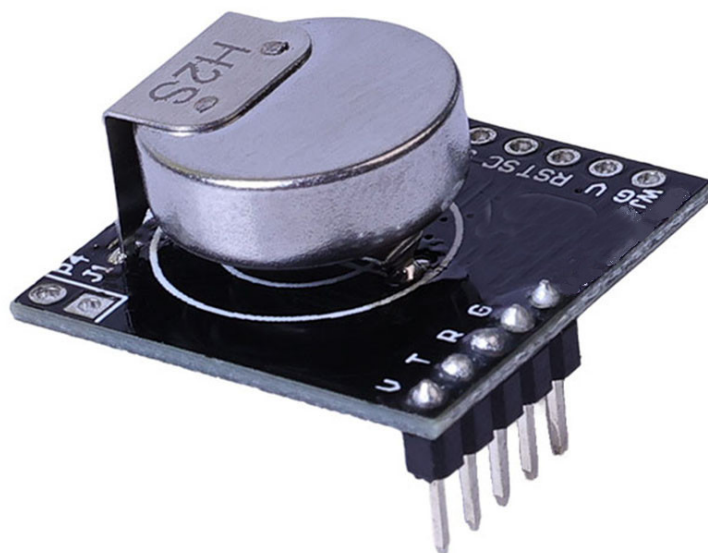


H2S-100F TX

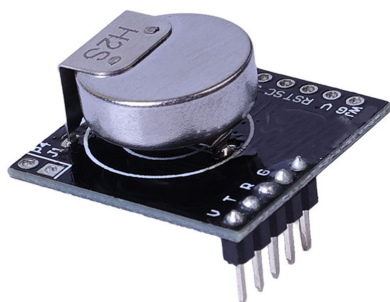
Hydrogen Sulphide

Digital Transmitter Module



Introduction

The H₂S-100F TX Hydrogen Sulphide module combines our selective fuel cell H₂S sensor with highly accurate advanced electronic control technology, converting H₂S 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

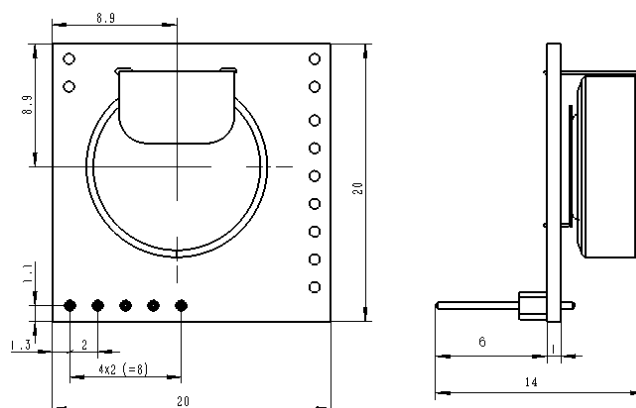
- Mini size ideal for low power applications
- Long lifetime technology of 15 years
- Zero power consumption
- High sensitivity, fast response
- Selective detection, high precision
- No risk of leakage
- Wide temperature range from -40°C to +125°C

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

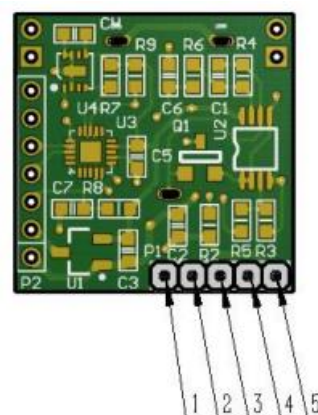
Dimensions

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-100F TX |
|-----------------------------|---------------------------------|
| Detection Principle | Micro fuel cell |
| Detectable Gas | H ₂ S |
| Detection Range | 0-100ppm |
| Maximum Overload | 200ppm |
| Input Voltage | 4.5 - 6.0V |
| Response Time (T90) | < 30 seconds |
| Resolution | 0.1ppm |
| 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 | 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,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/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. 2508

