

SSN-GOI-CH4

Infrared methane sensor



PRODUCTS FEATURES

- High sensitivity, high resolution, low power consumption, fast response time
- Provide UART, analog voltage
- Temperature compensation, excellent linear output
- Excellent stability, long service life
- Anti-water vapor interface, not poisoning
- Can directly replace the catalytic combustion principle of the sensor

1. Technical parameter

Table 1. characteristics

Parameter	Condition
Detection gas	Methane
Working voltage	3.6 to 5 V DC
Average current	<85mA
Interface level	3.0 V
Measurement range	0 to 100% VOL (range optional)
Output signal	UART 0.4~2.0 V
Warm-up time	3 min
Response time	T ₉₀ < 30s
Operating temperature	-20~60°C
Humidity range	0%~95%RH (non-condensing)
Dimensions	Ø20mm x 22.6mm
Weight	35g
Protection class	IP54
Life	>5 years
Intrinsically safe parameters	Ui: 5.5V, Ii: 125mA, Pi: 0.172W, Ci: 10.92µF, Li: 0µH

Table 2. Common ranges and accuracy

Gas Name	Molecular Formula	Measurement range	Resolution	Digit	Note
Methane	CH4	0~5.00%Vol	0.01%Vol	2 bits	Temperature compensation
		0~10.00%Vol		2 bits	
		0~100%%Vol	1%Vol	None	

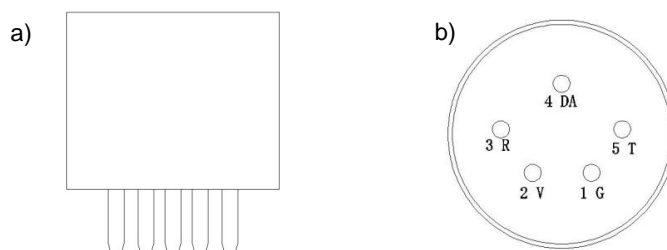


Figure 1.1. Sensor structure diagram a) side view b) bottom view

2. Mechanical Dimension and pin definition

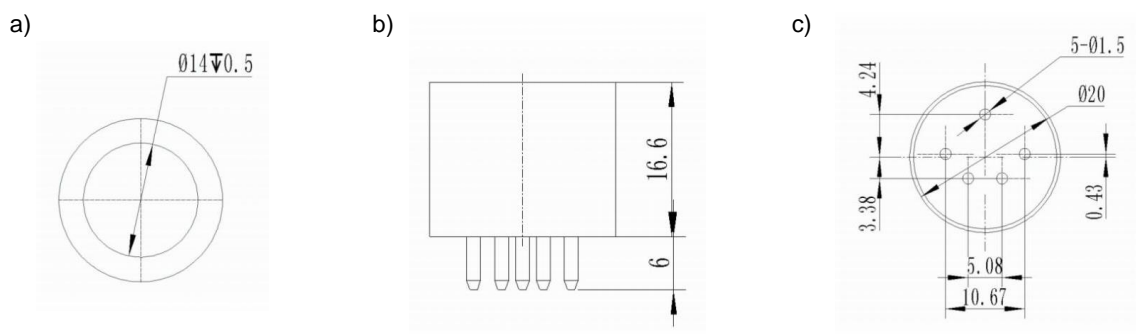


Figure 2.1. Mechanical dimensions in mm a) top view b) projection view c) bottom view

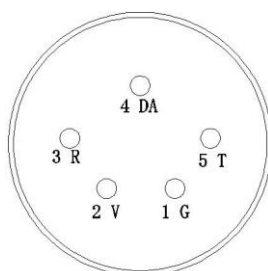


Figure 2.2. Bottom view

Table 3. Pin definition

Pin name	Pin description
Pin 2	Vin Positive voltage input
Pin 1	GND Voltage input negative electrode
Pin 4	DA (0.4~2V)
Pin 3	R(RXD) 0~3.0V Data entry
Pin 5	T(TXD) 0~3.0V Data output

3. Output method

Analog voltage output

Vout output voltage range (0.4V~2V), corresponding to the gas concentration (0~full scale). Connect the sensor Vin terminal to 5V, GND terminal to power ground, and DA terminal to the ADC input. After a warm-up time, the sensor outputs a voltage value from the DA terminal that characterizes the gas concentration.

When a self-test fault occurs, the sensor output voltage is 0V.

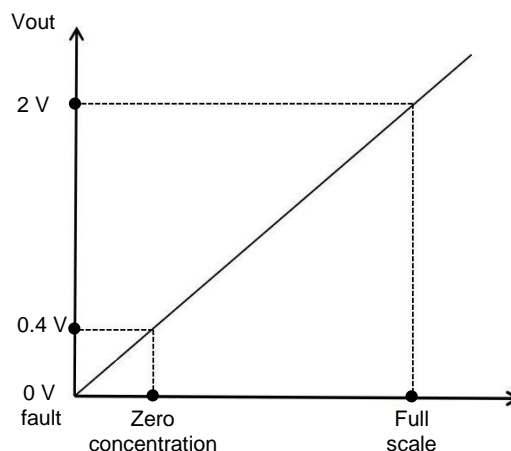


Figure 3.1. Correspondence of output voltage and gas concentration

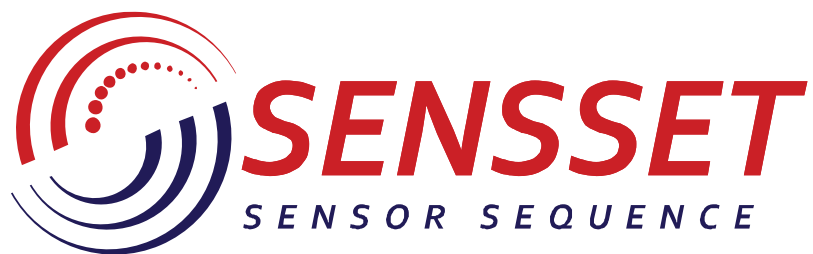
4. Information about intrinsically safe and explosion-proof version of the sensor

This product complies with GB/T3836.1-2021 "Explosive Environment Part 1: General Equipment Requirements", GB/T3836.4-2021 "Explosive Environment Part 1: General Equipment Requirements", GB/T3836.4-2021 Environment Part 4: Equipment protected by Intrinsically safe "i" and GB3836.20-2010 "Explosive Environment Part 20: Equipment with equipment protection level (EPL) of Ga Level" standard; the explosion-proof mark is Ex ia IIC T4 Ga, which is suitable for explosive environments in zone 0, Zone 1, and Zone 2; it has passed the inspection by the National Explosion-proof Electrical Product Quality Inspection Center and obtained an explosion-proof certificate. When using, please pay attention to the following :

- An intrinsically safe power supply must be used to power the sensor, otherwise it will affect the explosion-proof performance.
- It is forbidden to replace sensors in dangerous places.
- It is forbidden to disassemble or replace the sensor components so as not to affect the explosion-proof performance.
- Replacement of components or structures is not allowed, so as not to affect the explosion-proof performance.

5. Special Notes.

- The sensor should be calibrated periodically, with a recommended calibration interval of 6 months.
- Do not use the sensor for long periods of time in dense dust environments.
- Use the sensor within the power supply range of the sensor.
- Do not cut or weld sensor pins.



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Development, production and supply of high-tech sensors