MNS-QT221 Carbon dioxide gas sensor

Product Description

The MNS-QT221 infrared carbon dioxide gas sensor utilizes non-dispersive infrared (NDIR) technology to collect signals from CO2 present in the air. This sensor boasts excellent performance and good stability, and features a built-in temperature compensation function.
The MNS-QT221 infrared carbon dioxide gas sensor features a built-in micro precision gas circuit, which is formed through post-sealing processing, and exquisite circuit design
It incorporates precise academic algorithms to ensure accurate and stable signal data acquisition from sensors. The product is easy to use and has a long lifespan of up to 5 years
Infrared carbon dioxide sensors are widely used in scenarios where the concentration of gases in the environment needs to be monitored



Key Features

- High sensitivity, high resolution, low power consumption, and fast response time
- Provides multiple output modes such as UART and analog voltage
- Temperature compensation, excellent linear output, superior stability, and long service life
- Resistance to water vapor interference and poisoning
- Use in online monitoring of industrial instruments

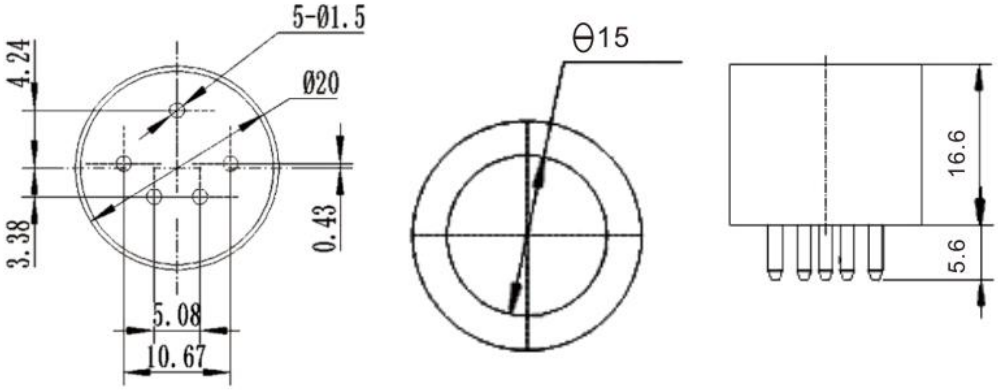
Main applications

- HVAC (Heating, Ventilation, and Air Conditioning) and Indoor Air Quality Monitoring
- Monitoring of agricultural and livestock production processes

Technical specifications

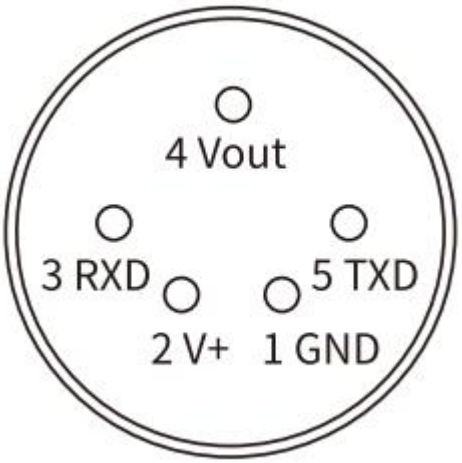
Operating Voltage	3.3～5VDC
Measurement range	0-2000ppm、0-5000ppm、0-1%vol、0-2%vol、0-5%vol、0-100%vol
Accuracy	±5%FS
Temperature compensation	Have
Average current	<85mA
Interface level	DC3.0V
Output signal	UART/0.4～2V
Warm-up time	180S
Response time	T90<30s
Operating Temperature	-20～60℃
Operating Humidity	0～95%RH(No condensation)
Lifespan	>5 years
Protection level	IP65
Weight	25g
Source terminal, communication terminal/ intrinsic safety parameters	Ui=7.5VDC,Ii=265mA,Pi=0.5W,Ci=10μF,Li=0mH

Structural dimensions（Unit：mm）

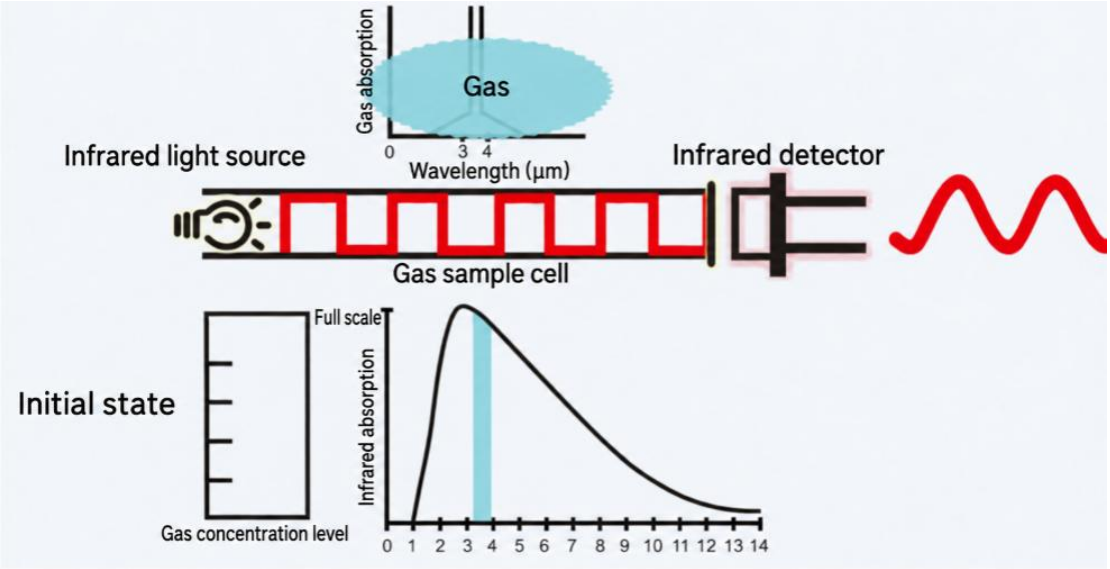


Pin definition

Pin Name	Pin Description
Pin 1	GND
Pin 2	Vin voltage input
Pin 3	UART(RXD)Data input 0 - 3.0V
Pin 4	Vout(0.4～2V)
Pin 5	UART(TXD)0~3.0V data output"



Usage Diagram



Output method

Analog voltage output

The output voltage range of Vout is (0.4~2V), corresponding to the gas concentration (0~full scale).
Connect the sensor's Vin terminal to 5V, GND terminal to the power supply ground, and Vout terminal to the ADC input. After a warm-up period, the sensor outputs the voltage value of the gas concentration from the Vout terminal. When a fault is detected during self-inspection, the sensor output voltage is 0V

