INDUSTRIAL GRADE
NDIR GAS SENSOR

SRH, SJH, SBH, SEH Series
For CO_2, CH_4, C_3H_8, CH_3Br

CONTACT US

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All products are in continuous development and therefore specifications may be subject to change without prior notice.

Cubic Core Technology

NDIR

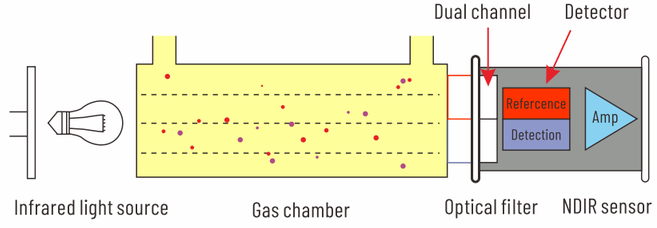
Non-dispersive Infrared(NDIR) Principle
Dual beam design

Molecules like carbon dioxide (CO_2), methane (CH_4), propane (C_3H_8) and methyl bromide (CH_3Br) can all be directly measured in air by monitoring a specific spectral absorption wavelength in the infrared range.

An NDIR sensor design can be simplified into its core components:

- A gas chamber that allows air and gas molecules to naturally diffuse into and out of the chamber
- A light source that emits light into the gas chamber
- A photodetector and optical filter that measures the increase or decrease of light intensity at a specific light wavelength
- An amplifier circuit to measure the output light intensity measurement signal from the photodetector

CO_2 molecules inside the gas chamber will only absorb a specific wavelength of the light. The filter allows only the specific wavelength corresponded to pass through it. One detector measures the intensity of infrared light that is related to the intensity of CO_2 and can be described through the Lambert-Beer's Law. The other detector is as for reference. The change in sensor signal reflects the change in gas concentration.



SJH Series -CH_4 sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Matrix calibration ensures excellent accuracy
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Reference channel for self-compensation
- Ex-proof grade Ex ia II C T4 Ga
- Digital and analog output (UART-TTL/DA output)

Applications

- Mine, Metallurgy, Oil & Gas
- LNG gas leakage alarming
- Liquefied gas station
- Fuel gas transport
- Chemical industry
- Sewage system
- Biogas monitoring
- Environmental monitoring

SJH Selection

Specifications		SJH Type	
Sensor Dimension (mm)	Φ20*19	SJH-5A	SJH-100A
	Φ20*16.6	SJH-5B	SJH-100B
Concentration Range		0~5%Vol	0~100%Vol
Accuracy		0~1%: ≤±0.06%Vol 1%~100%:≤±6% of reading	
Resolution		0.01%Vol	
Working Temperature		-40℃~70℃	

SBH Series -C_3H_8 sensors

Features

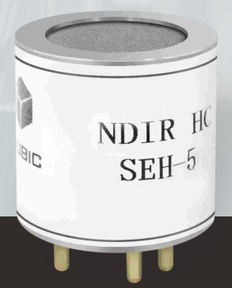
- NDIR technology
- Long lifespan (>10 years)
- Matrix calibration ensures excellent accuracy
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Reference channel for self-compensation
- Ex-proof grade Ex ia II C T4 Ga
- Digital and analog output (UART-TTL/DA output)

Applications

- Metallurgy, oil & gas
- LPG gas leakage alarming
- Petrol chemical industry
- Refrigerant leakage monitoring
- Biological and pharmaceutical chemistry

SBH Selection

Specifications		SBH Type	
Sensor Dimension (mm)	Φ20*19	SBH-2A	SBH-5A
	Φ20*16.6	SBH-2B	SBH-5B
Concentration Range		0~2%Vol	0~5%Vol
Accuracy		0~1%: ≤±0.06%Vol 1%~5%:≤±6% of reading	
Resolution		0.01%Vol	
Working Temperature		-40°C~70°C	



SEH Series -CH_3Br sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Matrix calibration ensures excellent accuracy
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Reference channel for self-compensation
- Digital and analog output (UART-TTL/DA output)

Applications

- Industrial safety
- Fumigation
- Agriculture pesticide
- Grain storage
- Wood preservation
- Entry-Exit inspection and quarantine

SEH Selection

Specifications		SEH Type
Sensor Dimension (mm)	Φ20*19	SEH-5A
	Φ20*16.6	-
Concentration Range		0~5%Vol
Accuracy		0~1%: ≤±0.06%Vol 1%~5%: ≤±6% of reading
Resolution		0.01%Vol
Working Temperature		-40°C~70°C

SRH Series -CO_2 sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Matrix calibration ensures excellent accuracy
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Reference channel for self-compensation
- Digital and analog output (UART-TTL/DA output)

Applications

- CO_2 gas leakage alarming
- Incubator monitoring
- Agriculture industry
- Rebreather diving safety
- Underground garage
- Hydroponic culture
- Cellar and gas stores
- Marine vessels
- Landfill gas
- Controlled-atmosphere storage, cold-chain

SRH Selection

Specifications		SRH Type					
Sensor Dimension (mm)	Φ20*19	SRH-05A	SRH-1A	SRH-2A	SRH-5A	SRH-10A	SRH-20A
	Φ20*16.6	SRH-05B	SRH-1B	SRH-2B	SRH-5B	SRH-10B	SRH-20B
Concentration Range		0~5000ppm	0~10000ppm	0~2%Vol	0~5%Vol	0~10%Vol	0~20%Vol
Accuracy		±200ppm	±400ppm	0~1%:≤ ±0.1%Vol 1%~5%: ≤ ± (0.05%+5% of reading) 5%~full range: ≤±6% of reading			
Resolution		1ppm		0.01%Vol			
Working Temperature		-40°C~70°C					

SRH-40 sensor -CO_2 sensors

Low Power Consumption
High Cost-Effective

SRH-40 sensor is based on dual beam Non-dispersive Infrared (NDIR) technology to detect CO_2 levels from 0~40% volume in air and is a cost-effective and high performing solution for the most difficult applications and ideally suited to be applied for grain storage and silobag monitoring.

Features

- Low Power Consumption
- Matrix calibration ensures excellent accuracy
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Reference channel for self-compensation
- Digital and analog output (UART-TTL/DA output)

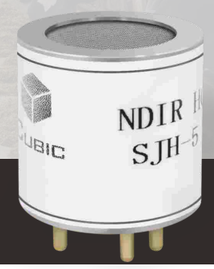
Applications

- Intelligent agriculture
- Silobag monitoring
- Rebreather diving safety
- Gas drainage pipes monitoring
- CO_2 production monitoring
- Grain storage
- Silobag monitoring
- Landfill gas
- Abandoned oil wells monitoring

Specifications

Specifications		Type
Sensor Dimension (mm)	Φ20*19	-
	Φ20*16.6	SRH-40
Concentration Range		0~40%Vol
Accuracy		0~5% Vol: ±0.5% Vol 5%~40% Vol: ≤ ±10% of reading
Resolution		0.01%Vol
Working Temperature		-25°C~55°C
Working current		＜20mA

SJH-100A-L-CH_4 sensors



The miniature methane sensor SJH-100A-L is based on NDIR technology with dual beam design, which is superior to semiconductor and catalytic technology, and can detect 0~100%Vol methane (CH_4) concentration.
It has the advantages of low power consumption, accurate measurement, convenient operation, long lifespan, etc.
With a low power IR source, SJH-100A-L can achieve average current consumption 16mA which makes the sensor suitable for battery or solar powered IoT device. It's an energy-efficient, reliable and accurate solution for industrial application.

Features

- NDIR technology
- Matrix calibration ensures excellent accuracy
- Low power consumption
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Digital and analog output (UART-TTL/DA output)
- Long lifespan (>10 years)
- Ex-proof grade Ex ia II C T4 Ga

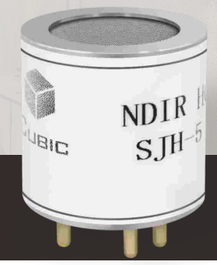
Applications

- Mine, metallurgy, oil & gas
- LNG gas leakage alarming
- Liquefied gas station
- Fuel gas transport
- Chemical industry
- Sewage system
- Biogas digester monitoring
- Environmental monitoring
- Animal agriculture

Specifications

Specifications		SJH-L	
Sensor Dimension (mm)	Φ20*19	SJH-5A-L	SJH-100A-L
	Φ20*16.6	SJH-5B-L	SJH-100B-L
Concentration Range		0~5%Vol	0~100%Vol
Accuracy		0~1%: ≤±0.06%Vol 1%~100%:≤±6% of reading	
Resolution		0.01%Vol	
Working Temperature		T_{90}<25s, diffusion type	
Working current		16mA, and inrush current up to 58mA	
Working Temperature		−40℃~70℃	

SJH-100A-SL-CH_4 sensors



The miniature methane sensor SJH-100A-SL is based on NDIR technology with dual beam design, which is superior to semiconductor and catalytic technology, and can detect 0~100%Vol methane (CH_4) concentration.
It has the advantages of low power consumption, accurate measurement, convenient operation, long lifespan, etc.
With a super low power LED source, SJH-100A-SL can achieve average current consumption 1mA that makes the sensor suitable for battery or solar powered IoT device and portable device. It's an energy-efficient, reliable and accurate solution for industrial application.

Features

- NDIR technology
- Matrix calibration ensures excellent accuracy
- Super low power consumption
- Temperature & humidity compensation
- High humidity alarm with self diagnostics design
- Digital and analog output (UART-TTL/DA output)
- Long lifespan (>10 years)
- Ex-proof grade Ex ia II C T4 Ga

Applications

- Mine, metallurgy, oil & gas
- LNG gas leakage alarming
- Liquefied gas station
- Fuel gas transport
- Chemical industry
- Sewage system
- Biogas digester monitoring
- Environmental monitoring
- Animal agriculture

Specifications

Specifications		SJH-SL	
Sensor Dimension (mm)	Φ20*19	SJH-5A-SL	SJH-100A-SL
	Φ20*16.6	SJH-5B-SL	SJH-100B-SL
Concentration Range		0~5%Vol	0~100%Vol
Accuracy		0~1%: ≤±0.06%Vol 1%~100%:≤±6% of reading	
Resolution		0.01%Vol	
Working Temperature		T_{90}<25s, diffusion type	
Working current		1mA	
Working Temperature		−40℃~70℃	