CUBIC

INDUSTRIAL GRADE
NDIR GAS SENSOR

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

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Cubic Core Technology

NDIR

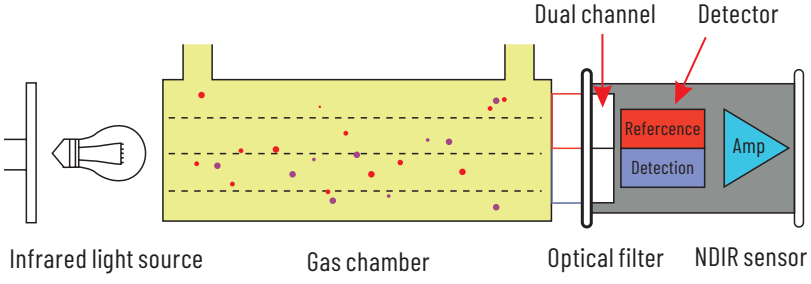
Non-dispersive Infrared(NDIR) Principle
Dual beam design

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)
- Shock-resistant IR source available, diffusion sampling
- Temperature & Humidity Compensation
- High Humidity Alarm with Fail-Safe Design
- Reference channel for self-compensation
- Auto zero-calibration mechanism
- Ex-proof grade Ex ia II C T4 Ga
- Digital and analog voltage signal 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 digester monitoring
- Environmental monitoring

SJH Selection

Specifications		SJH Type	
Sensor Dimension (mm)	Φ20*19	SJH-05	SJH-100
	Φ20*16.6	SJH-05XD	SJH-100XD
Concentration Range		0~5%Vol	0~100%Vol
Accuracy		0~1%: ±0.06%vol. 1~2.5%: ±6% of Reading 2.5%~full range: ±6% of Reading	
Resolution		0.01%	
Working Temperature		-40°C~70°C	

SBH Series -C_3H_8 sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Shock-resistant IR source available, diffusion sampling
- Temperature & Humidity Compensation
- High Humidity Alarm with Fail-Safe Design
- Reference channel for self-compensation
- Auto zero-calibration mechanism
- Ex-proof grade Ex ia II C T4 Ga
- Digital and analog voltage signal output (UART-TTL/ DA output)

Applications

- Mine, Metallurgy, Oil & Gas
- LPG gas leakage alarming
- Petrol chemical industry
- Refrigerant leakage monitoring
- Biological and Pharmaceutical chemistry
- Boiler room gas monitoring

SBH Selection

Specifications		SBH Type
Sensor Dimension (mm)	Φ20*19	SBH-2
	Φ20*16.6	SBH-2XD
Concentration Range		0~2%Vol
Accuracy		≤±0.1%Vol
Resolution		0.01%
Working Temperature		-40°C~70°C

SBrH Series -CH_3Br sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Shock-resistant IR source available, diffusion sampling
- Temperature & Humidity Compensation
- High Humidity Alarm with Fail-Safe Design
- Reference channel for self-compensation
- Digital and analog voltage signal output (UART-TTL/DA output)
- High precision

Applications

- Industrial Safety
- Fumigation
- Agriculture pesticide
- Grain storage
- Wood preservation
- Entry-Exit Inspection and Quarantine

SBrH Selection

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

SRH Series -CO_2 sensors

Features

- NDIR technology
- Long lifespan (>10 years)
- Shock-resistant IR source available
- Temperature & Humidity Compensation
- High Humidity Alarm with Fail-Safe Design
- Matrix calibration
- Reference channel for self-compensation
- Full range linearized and digital signal output (UART-TTL)

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-05	SRH-1	SRH-2	SRH-5	SRH-10	SRH-20
	Φ20*16.6	SRH-05XD	SRH-1XD	SRH-2XD	SRH-5XD	SRH-10XD	SRH-20XD
Concentration Range		0~5000ppm	0~1%Vol	0~2%Vol	0~5%Vol	0~10%Vol	0~20%Vol
Accuracy		≤±25ppm or 10% of reading, larger value as criteria		0~1%: ≤±0.1%Vol. 1%~full range: ≤±(0.05%+5% of reading)		0~1%: ≤ ±0.1%Vol. 1%~5%: ≤ ±(0.05%+5%of reading) 5%~full range: ≤ ±10% of reading	0~1%:≤ ±0.1%Vol. 1%~5%: ≤ ±(0.05%+5%of reading) 5%~full range: ≤ ±10% of reading
Resolution		1ppm		0.01%			
Working Temperature		-40°C~70°C					

Low Power Consumption
High Cost-Effective

New Product

SRH-40 sensor

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, silobag monitoring.

Features

- Low Power Consumption
- Shock-resistant IR source available
- Temperature & Humidity Compensation
- High Humidity Alarm with Fail-Safe Design
- Matrix Calibration
- Reference channel for self-compensation
- Full range linearized and digital signal output

Applications

- Intelligent agriculture
- Industrial safety
- 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%
Working Temperature		-20℃~50℃
Working current		＜2mA

CONTACT US

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