

Features

- Accurate measurement for methane in ambient air
- Super low concentration range 0~1000ppm
- High accuracy with minimal detection limit 1ppm
- Superior anti-cross interference compared with semiconductor technology
- Fast response to capture minor gas leakage
- Smart power consumption design
- Long lifespan over 10 years
- OEM turnkey capability for detector level design

Applications



Oil and Gas Well



Wetlands and Lakes



Biogas Plant



Landfill Surrounding

Specifications

Specification	TDLAS CH ₄ Sensor for Ambient Air Methane Detection Gasboard-2502
Principle	TDLAS
Measurement Range	0~1000ppm
Minimal Detection Limit	1ppm
Resolution	0.1ppm
Accuracy	±(1ppm + 2% of reading) @ (0~100ppm) ±(5ppm + 2% of reading) @ (0~1000ppm)
Warm Up Time	<10s
Response Time	T ₉₀ <20s
Output	UART_TTL (3V)
Working Conditions	-20°C~60°C; 0~98%RH (non-condensing)
Storage Conditions	-40°C~85°C; 0~98%RH (non-condensing)
Working Voltage	3.2V~5.5V
Average Current	≤100mA (@25°C, 3.3V)
Dimension	97mm*84mm*278mm

* For details of technical parameters, please refer to the specification sheet.

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



CUBIC

TDLAS CH₄ Sensor

Gasboard-2501

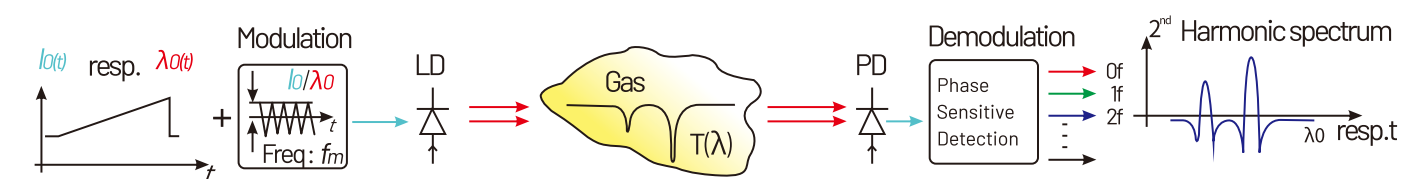


TDLAS

Cubic TDLAS Technology

Tunable diode laser absorption spectroscopy (TDLAS) is one of the most sensitive and selective technologies used for measuring concentration of gases (CH₄, O₂, CO, NH₃.etc) in a gases mixture by the characteristic of tunable laser source with narrow linewidth and tenability. It is based on Lambert-Beer law which state absorption spectroscopy principles.

- It consists of tunable laser transmitter, optical measurement path, detector and pressure sensor.
- Laser source emit laser beam into the gas mixture through optical measurement path, by precisely modulating the current of tunable laser, it can scan a certain absorption peak of detected gas.
- At the opposite end the detector converts received laser power, attenuated by target gas absorption, into an electrical signal.
- The detected attenuated electrical signal reflects the changes in target gas concentration .



📄 **Features**

- Narrow absorbing spectrum determines great selectivity to CH₄
- Laser technology to ensure superior accuracy with low drift
- Great anti-cross interference to other gases and high humidity
- Fast response time
- Low power consumption
- Long lifetime over 10 years
- ATEX & IECEx Ex ia IIC T4 Ga certified

☰ **Applications**



- Natural gas transmission and distribution pipeline networks
- Underground pipe network
- Underground well (electric manhole covers, gas well)
- Gas pressure regulating cabinet
- Mining gas leakage alarm
- Methane emission quantification

⚙️ **Specifications**

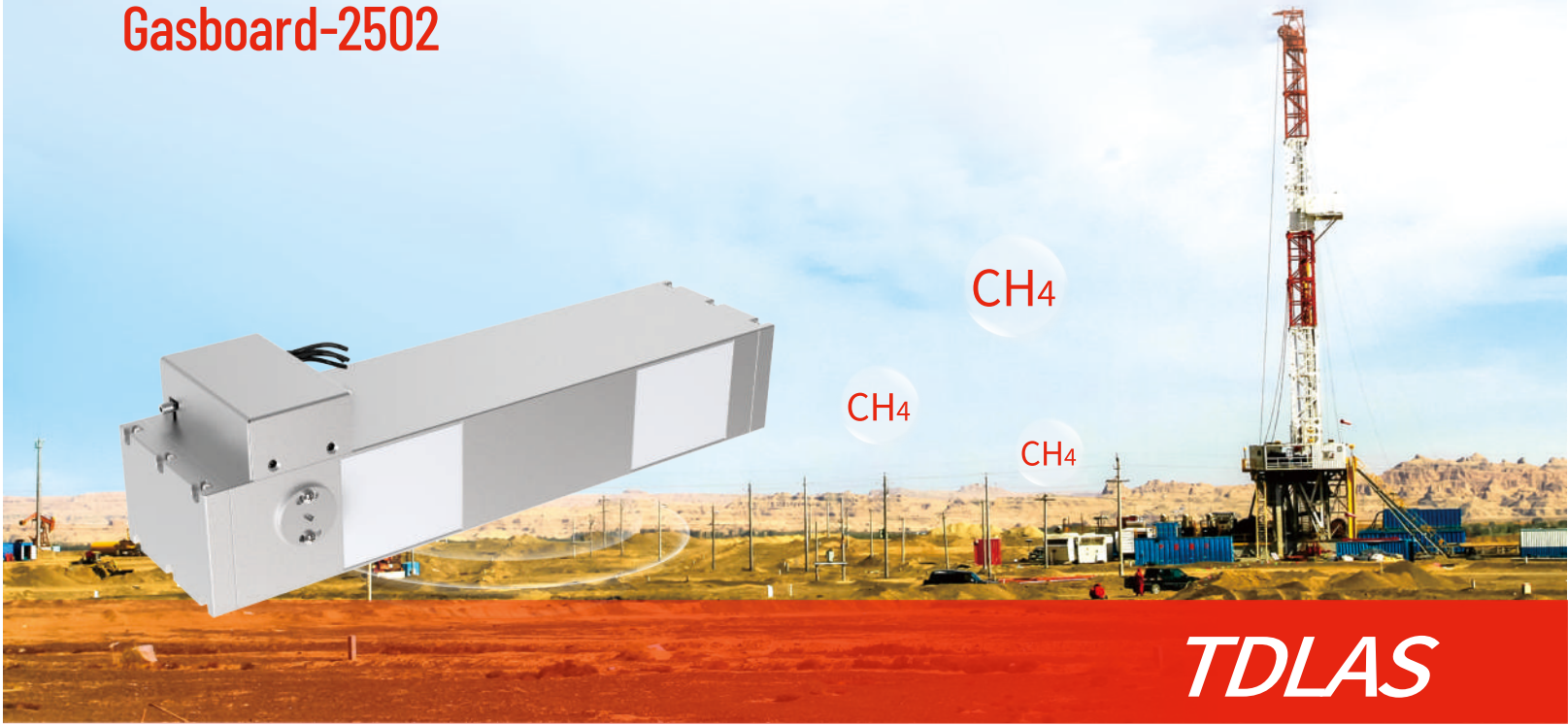
Specification	TDLAS CH ₄ Sensor	
Target Gas	Methane (CH ₄)	
Principle	Tunable Diode Laser Absorption Spectroscopy (TDLAS)	
Model	Gasboard-2501-05F	Gasboard-2501-100F
Measurement Range	0~100%LEL (=0~5%Vol)	0~100%Vol
Accuracy	±5%LEL	± (0.25%Vol or 5% of reading, take whichever is greater)
Resolution	0.1% LEL	
Response Time	T ₉₀ < 20s	
Working Temperature	-25°C~55°C	
Working Humidity	0~98%RH	
Working Voltage	3.2V~5.5V	
IP Grade	IP67	
Dimension	35mm*57.5mm (Diameter*Length)	

* For details of technical parameters, please refer to the specification sheet.



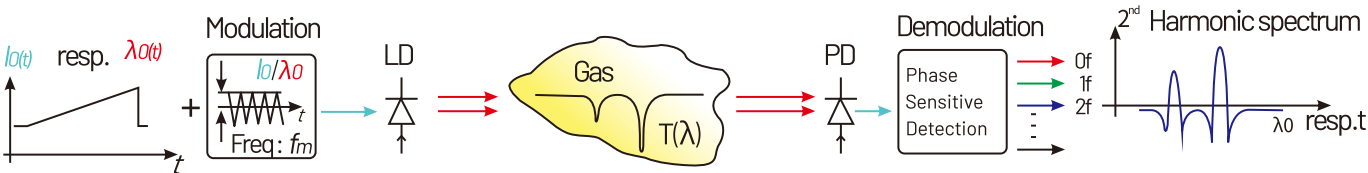
TDLAS Ambient Air Methane Sensor

Gasboard-2502



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Key Features	Tunable Diode Laser Absorption Spectroscopy(TDLAS)	Non-Dispersive Infrared(NDIR)	Semiconductor Technology(MOX)
Minimal Detection Limit	😊 Excellent	😐 Fair	😐 Fair
Accuracy	😊 Excellent	😊 Good	😞 Bad
No Cross-sensitivity	😊 Excellent	😊 Good	😞 Bad
Low Power Consumption	😊 Excellent	😊 Good	😞 Bad
Water Resistance	😊 Excellent	😐 Fair	😞 Bad
Long Term Stability	😊 Excellent	😊 Good	😞 Bad
Life Time	😊 Excellent	😊 Excellent	😞 Bad