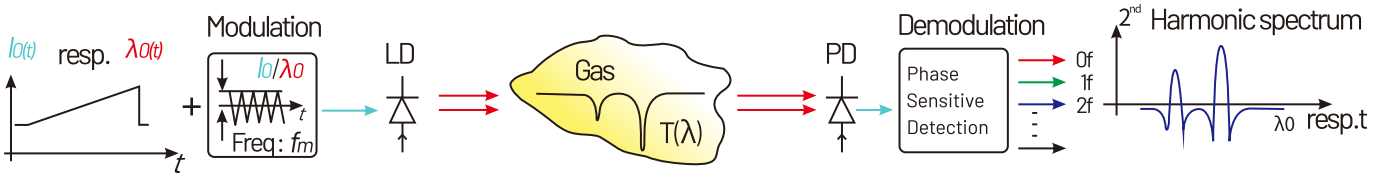
TDLAS CH4 Sensor

Gasboard-2501

Cubic TDLAS Technology

Tunable diode laser absorption spectroscopy (TDLAS) is one of the most sensitive and selective technologies used for measuring concentration of gases (methane, 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 determine unique selectivity for methane
- Laser technology to ensure superior accuracy with supper low drift
- Laser principle to ensure anti-humidity
- Extended cable with connector for better integration
- Full temperature calibration and auto temperature compensation
- 100% humidity interference free, up to IP67 protection level
- Very fast response
- Low power consumption

Applications

- Natural gas transmission and distribution pipeline networks
- Underground pipe network
- Underground well (electric manhole covers, gas well)
- Voltage regulator cabinet
- Mining gas leakage alarm

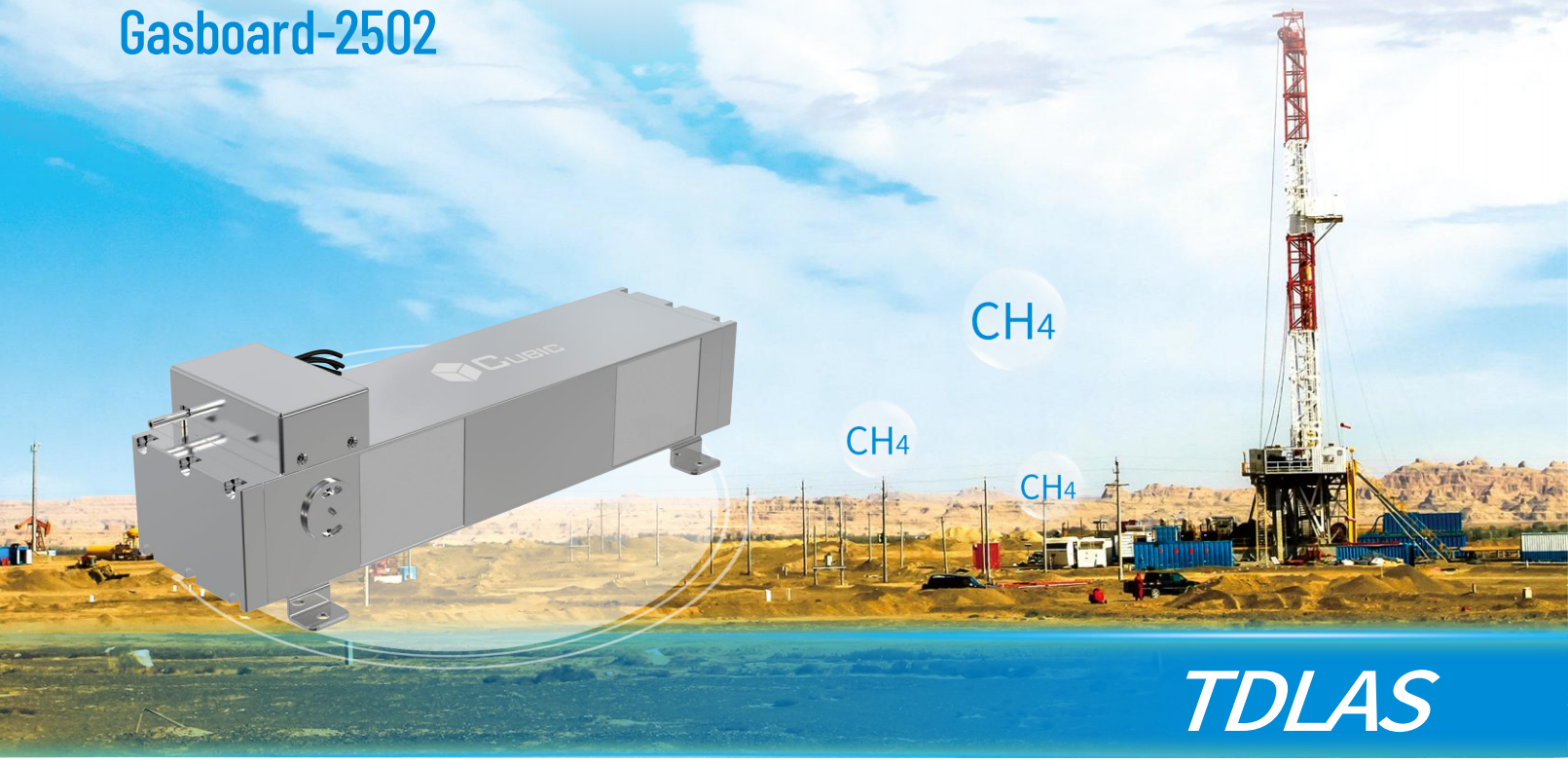
Specifications

Specification	TDLAS CH_4 Sensor Gasboard-2501
Target Gas	Methane (CH_4)
Working Principle	Tunable Diode Laser Absorption Spectroscopy (TDLAS)
Measurement Range	0~100% LEL
Accuracy	±5%LEL
Resolution	0.1% LEL
Response Time (T_{90})	T_{90} < 20s
Working Temperature	-25°C~55°C
WorkingHumidity	0~98%RH
Working Voltage	3.2V~5.5V
IP Grade	IP67
Dimension	40mm*89.5mm (diameter*length)

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

TDLAS Ambient Air Methane Sensor

Gasboard-2502



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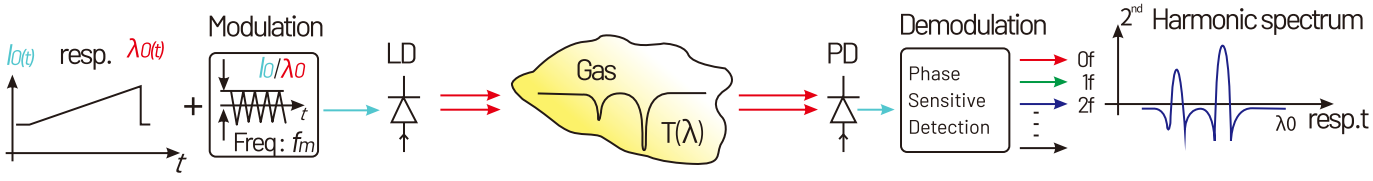

Key Features	Tunalbe Diode Laser Absorption Spectroscopy(TDLAS)	Non-Dispersive Infrad(NDIR)	Semicondor Technology(MOX)
Minimal Detection Limit	Excellent	Fair	Fair
Accuracy	Excellent	Good	Bad
No Cross-sensitivity	Excellent	Good	Bad
Low Power Consumption	Excellent	Good	Bad
Water Resistance	Excellent	Fair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

Features

- Accurate measurement for methane in ambient air
- Supper low concentration range 0~1000ppm
- High accuracy with minimal detection limit 1ppm
- Superior anti-cross interference compare 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 Surounding

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	5 ppm + 2% reading
Warm Up Time	<10s
Response Time	T_{90}＜20s
Output Voltage	UART_TTL (3V)
Working Environment	-20°C~60°C; 0~98%RH (non-condensing)
Storage Environment	-40°C~85°C; 0~98%RH (non-condensing)
Power Voltage	3.2V~ 5.5V
Average Current	＜50mA (@25°C, 3.3V)
Dimension	44mm*55mm*300mm

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

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