OPTOSKY Spectroscopy Solutions

Datasheet

Confined Space Gas Detection | GF200

Features

- Low-power microcontroller processor;
- Superior Gas Selectivity， Sensitive to methane Only
- Explosion-proof battery powered (standard mode more than 36 months);
- NB-IoT network transmission, parameters can be set remotely;
- Low power consumption micro diaphragm pump, interval collection;
- Beidou/GPS satellite positioning;
- Supports the collection of multiple data types such as gas concentration and liquid level;
- Support device under-voltage reminder and promptly notify users to replace the battery;
- IP68;
- safety equipment;
- Adopt pile-type and wall-mounted multi-scenario installation methods.

Application

- Oil & Gas Pipe line Detection for gas company
- Urban Natural Gas Pipeline Detection
- Industrial Park Detection
- Landfill Detection
- Greenhouse Gases Detection
- Refinery Detection

Description

GF200 underground pipe network combustible gas leakage monitor is used for leakage monitoring and early warning of combustible gas in urban lifeline underground pipe networks. This product adopts a point laser methane detection module, which has the only selectivity for methane and is not interfered by other gases, water vapor, and dust. The product is battery-powered, and can monitor the combustible gas concentration, battery power, and abnormal alarms of the underground pipe network in real time, and assist in maintenance operations such as statistics, query, and backup. Supports NB-IoT network transmission and seamlessly connects with 3G/4G networks. It adopts pile-type and wall-mounted multi-scenario installation methods to ensure the safe operation of urban pipe networks in all aspects.

In recent years, explosion accidents have occurred when combustible gases spread to underground spaces after gas pipeline leaks, posing a greater threat to regional public safety. The GF200 underground pipe network combustible gas leakage monitor is used to monitor and provide early warning for combustible gas leakage in urban lifeline underground pipe networks. The launch of this product has greatly improved the safety of the daily operation of the gas pipe network.

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1. Parameter

Detection Principle	TDLAS
Detection Object	Methane
Optional Measurement	temperature humidity
Measuring Range	0~100%LEL
Alarm Action Value	Low limit alarm value: 25% LEL; High limit alarm value: 50% LEL (alarm action value is adjustable ≥ 5% LEL)
Range Indication Deviation	5%LEL
Response Time	≦30S
Alarm Repeatability	≦3%LEL
Power Supply	Disposable lithium battery; battery capacity ≥36 months (standard working mode)
Battery Life	≥36 months (standard working mode)
Operating Voltage	3.6V
Rated Power	60mW
Display Method	LCD
Way Of Working	pump suction
Operation Method	Bluetooth, magnetic wand/two-way infrared
Data Transmission	NB-loT
Alarm Record	≥3000 items
Satellite Positioning	Beidou or GPS
Protection Level	IP68
Certification	Explosion-proof certification Ex d ib IIC T4 Gb
Installation Method	Measurement Certification CPA
Weight	Pile type, wall-mounted type

2. Working Principle

Tunable semiconductor laser absorption spectroscopy technology is a method based on Lambert-Beer dynamic gas absorption theory. This technology mainly uses the narrow linewidth and wavelength of the tunable semiconductor laser to change with the injected current. By modulating the wavelength of the laser, the wavelength of the measuring laser scans through the absorption peak of the gas molecules, so that the gas molecules react to the modulated laser. Absorption is performed to measure the concentration of gas molecules based on the amount of absorption.

The gas measurement optical module consists of a light source, a gas chamber, absorption and signal control and processing circuits, etc. It analyzes the gas concentration by detecting the light intensity attenuation before and after gas absorption.

The system principle is shown in the figure below.

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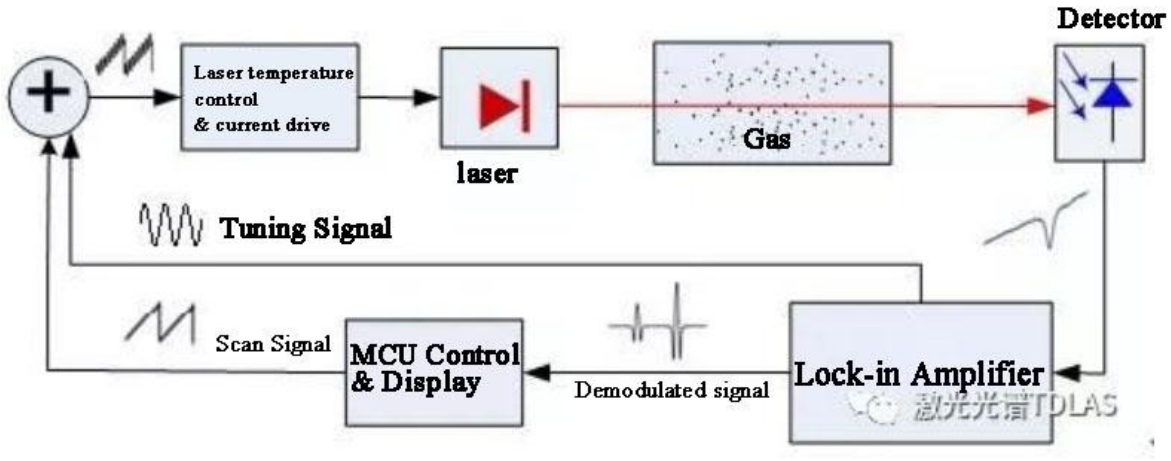

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