

Confined Space Methane Detector GF310

Features

- TDLAS Detection;
- Superior Gas Selectivity, Sensitive to methane Only
- Telemetry distance up to 30m;
- Sensitivity 5ppm.m;
- The response time is less than 0.1s, just click the start button to measure;
- Class I laser, eye protection;
- With sound and light vibration alarm function;
- Automatically detect fault alarms;
- Professional seismic design, IP66;
- Bluetooth interconnection function;
- Safety equipment.

Application

- Oil & Gas Pipeline Detection
- Urban Natural Gas Pipeline Detection
- Industrial Park Detection
- Landfill Detection
- Greenhouse Gases Detection
- Refinery Detection

Description

The portable laser methane telemeter is an advanced gas inspection equipment newly developed by Optosky. Using advanced laser gas detection technology and non-contact measurement, remote sensing can be achieved, detecting places that cannot be reached by personnel, and can accurately locate and quickly find the leak source. Small size, light weight, high sensitivity, fast response speed and good selectivity. This product can greatly improve personnel detection efficiency and reduce labor intensity.

The core module of GF310 uses advanced lasers and detectors to achieve high-precision, high-density, and high-reliability miniaturized integrated packaging. The telemetry optical component adopts an excellent optical system to improve the signal-to-noise ratio and ensure high telemetry accuracy and responsiveness of the telemeter. Fast and other advantages. The built-in reference air chamber can quickly locate the center wavelength and avoid repeated calibration of telemetry products.

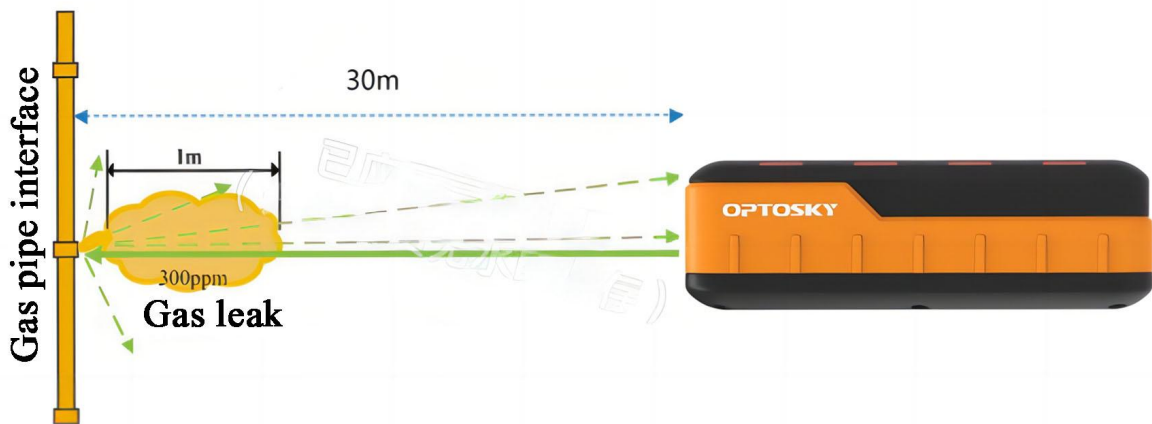


1. Parameter

Detection Principle	TDLAS
Detection Object	CH ₄
Examination Range	0-50000ppm.m
Sensitivity	5ppm.m
Detection Error	$\leq \pm 5\%$
Measure Distance	0-30m
Response Time	0.1s
Detect Laser Power	$\leq 15\text{mW}$
Power Supply	Powered by non-removable lithium battery
Show	LCD color screen
Alarm Mode	Sound, light and vibration alarm
Alarm Volume	Greater than or equal to 70dB (at one meter)
Laser Safety Level	Detection laser class I
	Indicating laser category 3R
Connectivity	Bluetooth, NBIOT
Penetrating	Objects that can be penetrated by light will not affect detection, such as detection through ordinary glass.
Protection Level	IP66
Explosion-Proof Level	Ex ib IIC T4 Gb, Ex ibD A21 IP66 T130℃
Device Interface	USB-Type-C
Continuous Working Time	$\geq 7.5\text{h}$
Operating Voltage	7.4V
Rated Power	3W
Appendix	Product*1, data cable*1, charger*1, packaging box*1, product manual*1

2. Working principle of GF310

The working principle of this product is: When the instrument is working, it emits detection laser in a specific wavelength range (different gases to be measured have different central wavelengths). The detection laser encounters reflective objects (such as the ground, valves, pipes, walls, etc.) , diffuse reflection occurs, and part of the laser light returns to the detection unit of the instrument. In the beam path, if there is an air mass formed by the leakage of the gas to be measured, the air mass will absorb the detection laser. The ratio of the amount of unabsorbed light to the amount of absorbed light is proportional to the concentration of the air mass. It can be deduced by calculating the ratio. The concentration of the air mass.



The measurement results are expressed in gas column concentration (ppm.m): gas concentration (ppm) $\times$ air mass thickness (m). As shown in the figure below, the gas concentration value is 300ppm and the thickness of the group is 1m, then the column gas concentration = 300ppm $\times$ 1m = 300ppm. m.

Notice:

- ①The detection value of this product is the overall concentration of the measured gas within the beam path, in ppm·m, which is the product of the gas concentration (ppm) and the size of the air mass (m);
- ②The material and angle of the reflector will affect the amount of returned light, which will in turn affect the detection value;
- ③The distance between this product and the reflective object will affect the amount of returned light, which will in turn affect the detection value;
- ④Weather factors (such as wind, rain, snow, etc.) will affect the amount of returned light, which will in turn affect the detection value.