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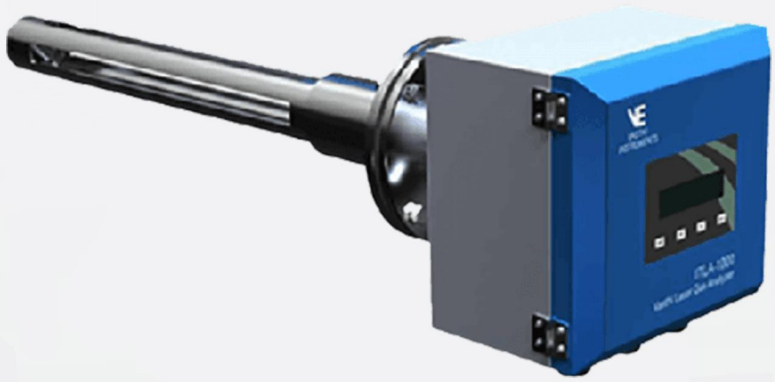
VASTHI
INSTRUMENTS

In-Situ TDLAS Laser Gas Analyzer



ITLA
1000XX

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Plot No. 21 & 22, Block No. 24,
Phase – 4, AutoNagar,
Guntur 522 001, AP

Overview

ITLA-1000xx (In-situ Tunable Laser Analyzer) laser gas analyzer is a high precise analyzer for gas measurement, developed based on tunable diode laser absorption spectroscopy. One-side mounting installation is much easier than cross-stack.

By using a tunable semiconductor laser ITLA-1000xx series laser gas analyzer scans the specific absorption lines of the measured gas (no background gas) to get the second harmonic of the gas. Through processing and analyzing the second harmonic and the broadening information of the gas, the concentration of the gas is obtained.

System Composition

Main functional modules of ITLA-1000xx include transmitter, receiver, reference unit and measurement unit. The transmitter drives the tunable diode to emit a laser of certain wavelengths, which passes through the gas cell, then reaches the receiver. The receiver performs signal processing to obtain Second harmonic signal, then calculates the processing to obtain second harmonic signal, then calculates the concentration according to the relationship between the second harmonic signal and the gas concentration.

Features

Non-contact optical measurement, low drift and with long service lite

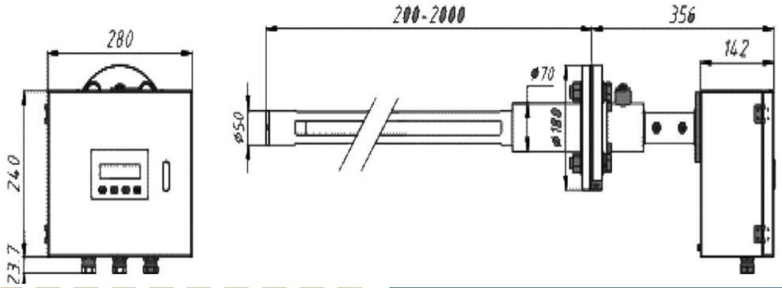
- One-side installation, no complex optical path adjustment required
- Reference gas cell adopted; online calibration; no disassemble needed
- "Signal line spectrum" technology, free from interference of background gas
- In-situ measurement, no sample conditioning required and avoiding the problems that sample is absorbed during the conditioning process, blocking, unit damage etc.
- Low maintenance cost

Technical Comparison

	One Side Mounting In-situ	Cross stack In-situ	On-Site Extractive
Installation Way	One Side Mounting In-situ	Cross stack In-situ	Heat tracing high temperature
Measurement Accuracy	"High accuracy, with temp & pressure compensation"	"High accuracy, with temp & pressure compensation"	High accuracy, temperature and pressure are stable
Environmental Adaptability	High, can be used in harsh condition	High, can not be used in high dust occasion	High, filter dust when gas sampling
Site Installation Complexity	Easy, directly install and no need to adjust light path	Easy, need to adjust light path	Easy, only one sampling hole needs to be opened
Maintenance Convenience	Convenient, long period of maintenance	Convenient, long period of maintenance	Convenient, gas cell can be scrubbed
Calibration	Easy	Easy	A Little Complex
System Complexity	Easy	Easy	Complex
Response Time (T90)	Very Short < 1 s	Very Short < 1 s	Short

Dimension & Installation

- 3.12 inch OLED display
- Support analog input/output and digital input/output
- One-side installation: only one hole required to be mounted
- Built-in power supply converter: 220VAC or 24VDC is optional
- Purge unit is installed nearby, providing stable purge flow and avoiding lens being polluted



Application

ITLA-1000xx series laser gas analyzer can be widely used in industrial process and environmental monitoring. At present, ITLA-1000xx laser gas analyzer has achieved successful application in blast furnace gas. convener gas recovery. gas calorific value analysis, electric catching focal safe control, coal Injection monitoring. garbage incineration flue gas denitration monitoring and control. etc. Our Company also can according to customer's demand to provide the laser which adapt to the diversified needs of different application fields.

	Application Environment	Monitoring Gas
Metallurgy	Blost furnace Iron making	CO. CO2:. 02.. CH4.
	Convener steelmaking	CO. CO2:. O2
	Coking production	CO. CO2:. 02.H2S NH3
	Other	CO. CH4. 02
Petrochemical Chemical	Oil refining	CO. CO2. O2 CH4.
	Ethylene cracking	CO. CO2..etc._
	EC/EC. PE/PP	CO2. C2H4., etC
	Ethyl benzene/styrene monomer/PS	02. CO/CO2
	PTA	CO. CO2,O2..
	Coal gasification	O2
	Methanol/ammonla/unee	O2. CO. CO2.. NH3....etc.
	Chlor-alkali/PVC	H2O. O2. CO2. C2H4, etc..
	Hydrogen peroxide	O2
	Sulphuric acid	O2
	TDI	O2
Environmental Protection	Flue gas emissions	Ha.. HF, CO, CO., Or, NH.. NO. NO:
Cement Production	Cement production	02. CO. CO2
Thermal Power	Thermal power	O2. CO

Specification Parameters

Principle		TDLAS (tunable diode laser absorption spectroscopy)
Technical Index	Repeatability	< 1%
	Span Drift	< + 1%F.S./half year
	Zero Drift	< + 1%F.S./half year
	Maintenance Cycle	< 2 times/year (clean optical window)
	Calibration Cycle	< 2 times/year
	Response Time (T90)	< 1 s
Signal I/O	Analog Output	2 4-20mA output (isolation, max load 750n)
	Analog Input	2 4-20mA input (temperature and pressure comp
	Relay Output	2 (24V, 1A)
	Digital output	RS485/RS232/GPR
Work Condition	Power Supply	24VDC or 220VAC
	Ambient Temperature	-20 C - +60 C
	Purge Gas	0.3MPa - 0.8MPa Industrial nitrogen, purification instrument air, etc.
Installation	Installation Method	In-situ installation
Technical Specifications	Repeatability	1%
	Linearity	+1,/oF.S.
	Response Time	<Is
	Zero Drift	+1%F.S./half year
	Span Drift	+1%F.S./half year
	4-20mA Analog Input Load	2
	Switch Input Load	2
	Switch output Load	2
	RS232	Ok
	RS485	Ok
	Ambient Temperature	-20 C - + 60 C
	Power Supply	24VDC
	Type of Protection	ExdIICT6 Gb
	Enclosure Rating	IP66

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