

SS-2000-HG Mercury Emission Monitoring System



I. Introduction

SS-2000-HG mercury emission monitoring system for flue gas is a combination of the world's advanced online analytical technology and China's environmental protection monitoring technology. It is based on the company's many years of accumulated experience in the field of gas analysis and adopts multi optical path UV atomic absorption method. The system consists of a sampling unit with heat trace, a valence converter, and an analysis and processing unit. It can realize continuous on-line automatic and accurate measurement of mercury from fixed sources of flue gas. The system uses Cold Vapor Atomic Absorption Spectrometry (CVAAS), which is the most mature and stable analytical method among many mercury analysis methods. This method can only analyze the elemental mercury (Hg₀) in the vapor state. CVAAS is based on the principle of selective absorption of ultraviolet light with a wavelength of 253.7 nm using mercury vapor. The low-pressure mercury lamp emits ultraviolet light through a gas chamber filled with sample gas and directly monitors the transmitted light intensity with an optoelectronic receiver to calculate the absorbance. Within a certain concentration range, the mercury concentration is proportional to the absorbance, which is in accordance with Beer-Lambert law. At the same time, oxygen, temperature, pressure, flow rate, humidity and other parameters can be monitored. Charts are generated through the data acquisition and processing system, and data remote transmission interfaces are reserved. The monitoring data can be transmitted to all levels of environmental protection according to the HJ/T212 national standard communication protocol. department.

II. Specifications

Sampling point	Measurement components	Ranges
Emissions stack	Hg	0-50-500 μ g/m ³ (can be customized)

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	O2	0-10%-25%
	Temperature	0-300℃
	Pressure	-5-5KPa(relative)
	Velocity	0-30m/s

1. Detection method: Cold Vapor Atomic Absorption (CVAAS)
2. Measurement range: 0-100µg/m³, 0-500µg/m³
- 3, detection limit: 0.05µg/m³
- 4, response time T90: <60S
- 5, accuracy: ≤10%
- 6, the average time between failures: ≥ 1440h / times
- 7, measurement cycle: real-time monitoring
- 8, the ambient temperature: 5-40 °C
- 9, power consumption: maximum 500W (main cabinet); maximum 150W/m (heat tracing line)

Features

- 1, the whole process of heat sampling, reduce the adsorption loss of mercury in the pipeline
- 2, simple and practical automatic calibration unit.
- 3, anti-corrosion high temperature materials to prevent smoke corrosion.
- 4, user-friendly software interface, easy to use.
- 5, full heat sampling, reduce mercury adsorption loss in the pipeline.
- 6, using cold atomic absorption spectrometry (CVAAS) analysis, the technology is mature and reliable.
- 7, a high degree of automation, real-time monitoring, real-time upload, all-weather unattended.
8. The high-temperature mercury valence converter does not need to consume any chemical reagents and catalysts, the conversion method is controllable and reliable, and the maintenance amount is small.
9. Effective anti-blocking measures, using high-pressure and high-frequency purge to clean the probe (back blow) to prevent smoke pollution analysis components

IV. Application fields

It is suitable for Hg emission monitoring of fixed source flue gas from power plants, smelting plants, cement plants, various industrial furnaces, boilers, household waste incineration, hazardous waste incineration, fluorescent lamp recycling, mercury mining and refining, and other Hg emission monitoring.

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