RadPro Energi
MANDIRI

Pollution Source Emission Monitoring System
Continuous Emission Monitoring System (CEMS)

System Overview

The YSB Continuous Emission Monitoring System (CEMS) is a domestically developed CEMS product. The system adopts the direct extraction method and uses a self-developed ultraviolet spectroscopy analyzer as the core technology. It can continuously monitor the following parameters in flue gas:

- SO_2 (Sulfur Dioxide)
- NOx (Nitrogen Oxides)
- O_2 (Oxygen)
- Particulate Matter (Dust)

The product has obtained environmental protection certification and is widely applied in industries such as:

- Power generation
- Metallurgy
- Industrial boilers

and other fixed pollution source applications.

System Features

1. Domestic CEMS Product

The system complies with the requirements of:

- HJ 75-2017 — Specification for Continuous Emission Monitoring Systems for Stationary Sources
- HJ 76-2017 — Technical Requirements and Test Procedures for Continuous Emission Monitoring Systems for Stationary Sources

2. Multi-Technology Integrated Measurement

The system adopts:

- Multi-path UV Differential Optical Absorption Spectroscopy (UV-DOAS) gas detection technology
- Forward Scattering Smoke/Dust Measurement Technology (FSS)

It can simultaneously measure:

- SO_2
- NOx
- O_2
- Particulate Matter concentration

and other emission parameters.

3. Stable, Reliable and Easy Maintenance

The system features:

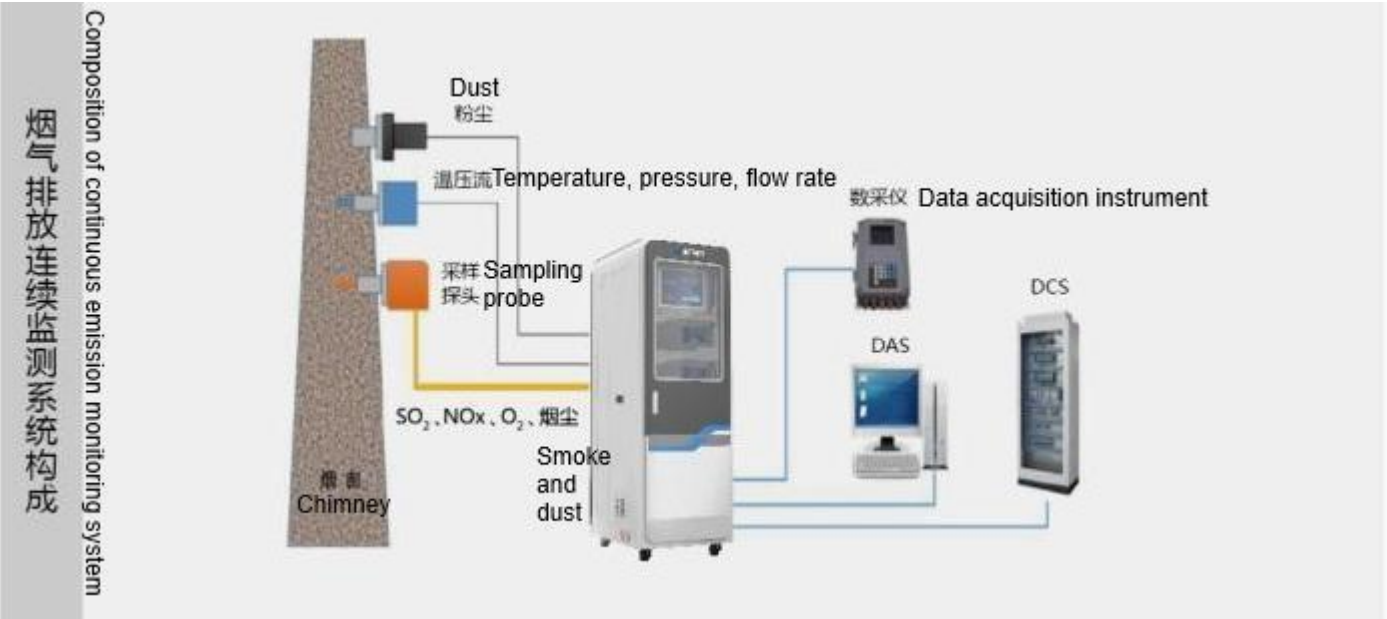
- High stability
- Strong anti-interference capability
- High integration level
- Easy maintenance

It is suitable for complex industrial flue gas conditions, including:

- High temperature environments
- High humidity environments
- Complicated gas compositions

Environmental Protection Certificate No.:
CCAEP-I-EP-2019-029

CEMS System Configuration



The Continuous Emission Monitoring System mainly consists of the following parts:

1. Flue Gas Sampling System

Installed on the chimney/stack:

- Dust monitoring device
- Temperature, pressure and flow monitoring device
- Sampling probe

Used for collecting flue gas parameters.

2. Flue Gas Analyzer System

The analyzer continuously detects:

- SO_2
- NOx
- O_2
- Particulate Matter

through real-time gas analysis.

3. Data Acquisition and Transmission System

Including:

- Data Acquisition Unit
- DAS (Data Acquisition System)
- DCS (Distributed Control System)

Functions:

- Data collection
- Data processing
- Remote transmission
- Online monitoring

Working Process

Stack → Sampling Probe → Flue Gas Analyzer → Data Acquisition Unit → DAS → DCS

Application

The CEMS system is mainly used for online emission monitoring of fixed pollution sources, including:

- Waste incinerators
- Medical waste incinerators
- Industrial boilers
- Cement kilns
- Power plants
- Metallurgical furnaces

It is commonly required for projects requiring compliance with environmental emission regulations.

Configuration table :

No.	Product Name		Specifications and Models	Remark	QTY
1	CEMS host	Analyzer	Ultra-low flue gas emission control unit (expandable range) Unit: mg/m3 SO2: 0-150 NO2: 0-100 NO: 0-400 CO: 0-100 CO2: 0-100 O2: 0-25%	ultra-low Meets environmental impact assessment requirements; emission range is 2-3 times the emission limit.	1 unit
2		Preprocessing unit	Electrical automatic control flow path unit Heating pretreatment		1 set
3		Data processing unit	Industrial tablet PC		1 set
4		Auxiliary Unit	Standard gas SO2: 1 bottle NO2: 1 bottle NO: 1 bottle O2:1 bottle N2: High-purity nitrogen gas 1 bottle Equipped with pressure reducing valve, filter, etc.		1 set
5	Sampling unit	Sampling probe	Sampling probe: 500mm		1 unit
6		Heat tracing pipeline	20 meters long, 40W/m power		1 set
7	Humidity meter	Humidity meter	Zirconia process		1 set
8	Temperature and pressure integrated machine	Flow probe	Pitot tube method, 500mm		1 unit
9		Installation components	Install flanges, etc.		1 set
10	Ultra-low dust monitor	Smoke and dust monitoring instrument	Domestic ultra-low dust monitor, laser forward scattering dust monitor Dosage range: 0-60 mg/m3	Meets the environmental impact assessment requirements of 0-20 mg/m3, with a range of 2-3 times the emission limit.	1 unit

11		Installation components	Install flanges, etc.		1 set
12	Dynamic control data acquisition and transmission instrument		According to customer requirements		1 set
13	Installation and debugging		As required		1 set