

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 75-2017

**Specifications for continuous emissions monitoring of SO₂,
NO_X, and particulate matter in the flue gas emitted from
stationary sources
(English Translation)**

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Table of Contents

Foreword...	4
1 Scope...	6
2 Normative references...	6
3 Terms and definitions...	7

1 Scope

This standard specifies the composition and functions, technical performance, monitoring station, installation, technical index commissioning and testing, technical acceptance, daily operation management, daily operation quality assurance, data review and processing requirements of the continuous monitoring system for flue gas emissions from stationary pollution sources, including gaseous pollutants (SO₂, NO_X), particulate matter emissions, as well as related flue gas parameters (oxygen content, etc.).

This standard applies to the continuous monitoring system for flue gas (SO₂, NO_X, particulate matter) emissions from stationary pollution sources such as thermal power plant boilers, industrial/civilian boilers, industrial furnaces that use solid or liquid as fuel or raw materials.

The continuous monitoring system for flue gas (SO₂, NO_X, particulate matter) emissions from domestic waste incinerators, hazardous waste incinerators, stationary pollution sources, that use gas as fuel or raw materials, can refer to this standard for implementation.

Before the corresponding standards for continuous monitoring systems for flue gas pollutant emissions are officially promulgated and implemented, they can refer to this standard for implementation.

2 Normative references

The content of this standard refers to the following documents or clauses therein. For any undated referenced documents, the latest version shall apply to this standard.

GB 4208 Degrees of protection provided by enclosure (IP code)

GB 50057 Code for design protection of structures against lightning

GB 50093 Code for construction and quality acceptance of automation instrumentation engineering

GB 50168 Standard for construction and acceptance of cable line electric equipment

installation engineering

GB/T 16157 The determination of particulates and sampling methods of gaseous pollutants emitted from exhaust gas of stationary source

3 Terms and definitions

3.1

Continuous emission monitoring, CEM

Continuous and real-time automatic monitoring of the emission concentration and emission of particulate matter and (or) gaseous pollutants, as emitted by stationary pollution sources, referred to as CEM.

3.5

Valid data

The data measured by the normal operation of CEMS under the condition of flue gas emission from stationary pollution sources, which meets the technical indicators of this standard and has passed the acceptance.

3.6

Valid hourly average

The arithmetic mean of valid data of not less than 45 minutes within 1 whole hour.

3.7

Reference method

A standard method published by a country or industry for comparison with CEMS measurement results.

3.8

Checkout/verification

The process of comparing the relative accuracy, correlation coefficient, confidence interval, allowable interval, relative error, absolute error, etc. of the test results of

CEMS (including sampling system and analysis system) using a reference method.

3.9

Performance testing

The calibration and verification of CEMS before technical acceptance after the installation, initial adjustment, normal continuous operation of CEMS for at least

168 hours.

3.10

Comparison testing

The accuracy of a normally operating CEMS is randomly checked using a reference method.

4 Composition and functional requirements of the continuous monitoring system of flue gas emissions from stationary pollution sources

CEMS consists of a particulate matter monitoring unit and (or) a gaseous pollutant monitoring unit, a flue gas parameter monitoring unit, a data acquisition and processing unit.

5 Technical performance requirements for continuous monitoring system of flue gas emissions from stationary pollution sources

Meet the relevant requirements of HJ 76.

6 Requirements for monitoring station of continuous monitoring system of flue gas emissions from stationary pollution sources

6.1 An independent station shall be provided for outdoor CEMS; the distance between the monitoring station and the sampling point shall be as close as possible, in principle not exceeding 70 m.

6.3 Air conditioning and heating equipment shall be installed in the monitoring station room; the indoor temperature shall be maintained at (15 ~ 30) °C; the relative humidity shall be ≤ 60%; the air conditioner shall have the function of automatic restart when a call is received; exhaust fans or other ventilation facilities shall be installed in the station room.

6.4 The power distribution power in the monitoring station room can meet the actual requirements of the instrument; the power is not less than 8 kW; at least 5 three-hole sockets, 1 voltage-stabilizing power supply, 1 UPS power supply are reserved.

6.5 The monitoring station room shall be equipped with certified standard gases of different concentrations;

6.6 The monitoring station room shall have necessary waterproof, moisture-proof, heat-insulating and thermal insulation measures; it shall also have explosion-proof functions in specific occasions.

6.7 The monitoring station room shall have communication conditions that can meet the data transmission requirements of CEMS.

7 Installation requirements for the continuous monitoring system for flue gas emissions from stationary pollution sources

7.1.1.1 Located downstream of the emission control equipment for stationary pollution

sources and upstream of the comparison monitoring section;

7.1.1.5 The installation location shall not leak air;

7.1.1.6 A waterproof low-voltage distribution box shall be set up in the working area where CEMS is installed, with a leakage protector and no less than two 10 A sockets to ensure the power required by the monitoring equipment;

7.1.1.7 The sampling platform and sampling holes shall be arranged reasonably;

7.1.2 Specific requirements

7.1.2.1

The vertical pipe section and the negative pressure area of the flue shall be preferred to ensure the representativeness of the collected samples.

7.1.2.3

For newly built emission sources, the sampling platform shall be designed and constructed simultaneously with the exhaust device, to ensure that the sampling section meets the requirements of 7.1.2.2 of this standard. For existing emission sources, when it is impossible to find a sampling position that meets 7.1.2.2, the CEMS sampling or

7.2.4 The design drawings shall comply with the provisions of technical drawings, mechanical drawings, electrical drawings, building structure drawings and other standards.

7.2.5 The cleaning, inspection, maintenance of the equipment before installation shall meet the following requirements.

8 Technical indicator performance testing of the continuous monitoring system for flue gas emissions from stationary pollution sources

After the CEMS is installed and operated on site, before acceptance, the technical performance indicators shall be debugged and tested. The technical indicators of performance testing include.

9 Technical acceptance of continuous monitoring system for flue gas emissions from stationary pollution sources

9.1 General requirements

After the installation, performance testing of CEMS are completed and the network is connected to the competent department, technical acceptance shall be carried out, including CEMS technical indicator acceptance and network acceptance.