

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HJ 818-2018

Replacing HJ/T 193-2005 Partial

**Technical specifications for operation and quality control of
ambient air quality continuous automated monitoring system
for SO₂, NO₂, O₃ and CO**

环境空气气态污染物（SO₂、NO₂、O₃、CO）连续自动监测系统运行和质控技术规范

(English Translation)

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Table of Contents

Foreword

1 Scope of application

2 Normative references

3 Terms and definitions

4.1 System composition

4.2 Air Quality Monitoring Substation

4.3 Central Computer Room

Foreword

To implement the Environmental Protection Law of the People's Republic of China and the Law of the People's Republic of China on the Prevention and Control of Air Pollution, regulate the ambient air gas state this standard is formulated for the continuous automatic monitoring of the operation and quality control of pollutants (SO₂, NO₂, O₃, CO).

This standard specifies the composition and requirements of the continuous automatic monitoring system for ambient air gaseous pollutants (SO₂, NO₂, O₃, CO), and daily Technical requirements for operational maintenance requirements, quality assurance and quality control, and data validity judgment.

This standard is a revision of the contents of the Technical Specifications for Automatic Monitoring of Ambient Air Quality (HJ/T 193-2005).

This standard was first published in 2005 and this is the first revision. The main contents of the revision are as follows.

- Revised the composition and requirements of the continuous automatic monitoring system for ambient air;
- Revised the daily operation and maintenance requirements of the system, increased the requirements for daily operation, instrument update and parameter adjustment of the system, and deleted Requirements for preventive maintenance;
- Revised the content and requirements of quality assurance and quality control, supplemented and improved the calibration of open optical path monitoring instruments, NO₂ monitor Quality control requirements for nitrogen dioxide conversion efficiency testing, monitoring instrument sampling flow calibration, dynamic calibrator flow calibration, etc., revised the content and requirements of precision audit and accuracy audit;
- Removed the requirement for data collection frequency and revised the requirements for

data validity judgment.

Since the implementation of this standard, the "Technical Specifications for Automatic Monitoring of Ambient Air Quality" (HJ/T 193-2005) relates to ambient airborne pollution.

The contents of the continuous automatic monitoring system operation and quality control of the dyes (SO₂, NO₂, O₃, CO) are abolished.

Appendix A to Appendix C of this standard are normative appendices, and Appendix D is an informative appendix.

This standard is formulated by the Environmental Monitoring Department and the Science and Technology Standards Department.

This standard was drafted. China Environmental Monitoring Center, Jiangsu Environmental Monitoring Center, Shanghai Environmental Monitoring Center.

This standard is approved by the Ministry of Ecology and Environment on August 13, 2018.

This standard has been implemented since September 1, 2018.

This standard is explained by the Ministry of Ecology and Environment.

1Continuous automatic monitoring system for ambient air gaseous pollutants (SO₂, NO₂, O₃, CO) Operation and quality control technical specifications

1 Scope of application

This standard specifies the composition and requirements of the continuous automatic monitoring system for ambient air gaseous pollutants (SO₂, NO₂, O₃, CO), and daily Technical requirements for operational maintenance requirements, quality assurance and quality control, and data validity judgment.

This standard applies to all levels of environmental monitoring stations (centres) and other environmental monitoring agencies (including social environmental monitoring agencies) using continuous automatic Operational management and quality control of monitoring systems for monitoring ambient airborne gaseous pollutants (SO₂, NO₂, O₃, CO).

2 Normative references

The contents of this standard refer to the terms in the following documents. For undated references, the valid version applies to this standard.

GB 3095 Ambient Air Quality Standard HJ 193 Environmental air gaseous pollutants (SO₂, NO₂, O₃, CO) continuous automatic monitoring system installation and acceptance technical specifications HJ 633 Ambient Air Quality Index (AQI) Technical Regulations (Trial) HJ 654 Environmental air gaseous pollutants (SO₂, NO₂, O₃, CO) continuous automatic monitoring system technical requirements and testing methods HJ 663 Technical

Specifications for Ambient Air Quality Assessment (Trial)

3 Terms and definitions

The following terms and definitions apply to this standard.

Continuous ambient air quality monitoring Refers to the process of continuous sample collection, processing and analysis of ambient air using continuous automatic monitoring instruments.

Point analyzers

Refers to the monitoring and analysis instrument that collects ambient air through a sampling system and determines the concentration of air pollutants.

Open path analyzers

Means for measuring the average air pollutant concentration on the optical path of the beam by using a method of emitting a light beam from the transmitting end through an open environment to a receiving end Device.

Continuous automatic monitoring system performance audit automatic analyzers performance audit Refers to the process of precision audit and accuracy audit of continuous automatic monitoring systems.

24 Composition and requirements of continuous automatic monitoring system for ambient air (part of gaseous pollutants)

4.1 System composition

Continuous automatic monitoring system for ambient air gaseous pollutants (SO₂, NO₂, O₃, CO) is calculated by air quality monitoring substation and center it consists of a machine room, a quality assurance laboratory, and a system support laboratory.

4.2.1 Main functions and components

Continuous automatic monitoring of ambient air quality and meteorological conditions (including temperature, air pressure, humidity, wind direction, wind speed, etc.), collection, Process and store monitoring data, and periodically transmit monitoring data and device operating status information to the central computer.

The air quality monitoring substation is mainly composed of substation station, sampling device, monitoring instrument, calibration equipment, data acquisition and transmission equipment, Auxiliary equipment and other components.

4.2.2 Basic requirements

The monitoring substation station and surrounding environment should meet the relevant requirements of HJ 193.

4.2.3 Instrument and equipment configuration

The equipment configuration of the monitoring substation shall meet the relevant requirements of HJ 654.

4.3.1 Main functions

Collect monitoring data and equipment working status information of each monitoring substation through wired or wireless communication equipment, and collect monitoring data Perform automatic identification and storage; perform statistical processing and analysis on the collected monitoring data; remotely diagnose the monitoring instruments of the monitoring substation and calibration.

4.3.2 Basic requirements

- a) The size of the central computer room should ensure that the operator is working properly.
- b) The central computer room shall have a sealed window structure. When conditions permit, the door and machine room can be equipped with a buffer room to prevent dust and dirt from entering the machine.
room.
- c) The central computer room should be equipped with temperature and humidity control equipment. The temperature of the equipment room is controlled at $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$, and the relative humidity is controlled at 80%.
the following.
- d) The power supply voltage of the central computer room is 220V, and the voltage fluctuation cannot exceed $\pm 10\%$. The power supply system should be equipped with a power supply overvoltage, the load and leakage protection devices must have a good grounding circuit with a grounding resistance of $\leq 4\text{ ohm}$. When available, UPS power is available.
- e) The central computer room should be equipped with a dedicated communication line.
- f) The central computer room should also comply with the relevant norms of the national environmental protection information system construction.