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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 193-2013

Replacing HJ/T 193-2005

Technical specifications for installation and acceptance 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)连续自动监测系统安装验收技术规范

(English Translation)

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Foreword

Implementing the "Environmental Protection Law of the People's Republic of China" Ambient Air Quality Standard (GB 3095-2012), standardizing ambient air gaseous pollutants (SO2, NO2, O3, CO) this standard is established for the installation and acceptance of automatic monitoring systems (hereinafter referred to as monitoring systems).

This standard specifies the composition, installation, commissioning, and acceptance of the continuous monitoring system for gaseous pollutants in ambient air.

Technical requirements.

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.

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-- Defining the installation and acceptance techniques for continuous automatic monitoring systems for gaseous pollutants (SO2, NO2, O3, CO) begging.

Since the implementation of this standard, the Technical Specifications for Automatic Monitoring of Ambient Air Quality (HJ/T 193-2005) related to gaseous pollution the contents of the installation and acceptance of continuous automatic monitoring system for dyes (SO2, NO2, O3, CO) are abolished.

Appendix A of this standard is a normative appendix, Appendix B, Appendix C, Appendix D, and Appendix E are informative appendices.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is mainly drafted by. China Environmental Monitoring Center.

This standard was approved by the Ministry of Environmental Protection on July 30, 2013.

This standard has been implemented since August 1, 2013.

This standard is explained by the Ministry of Environmental Protection.

Continuous automatic monitoring of ambient air gaseous pollutants (SO2, NO2, O3, CO) System installation acceptance specification

1 Scope of application

This standard specifies the installation of continuous automatic monitoring system for ambient air gaseous pollutants (SO2, NO2, O3, CO).

Technical requirements for commissioning, and acceptance.

This standard applies to the installation of continuous automatic monitoring systems for ambient air gaseous pollutants (SO2, NO2, O3, CO).

Acceptance activities.

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 3095-2012 Ambient Air Quality Standard GB 50168 Electrical installation engineering cable line construction and acceptance specifications HJ/T 212 pollution source online automatic monitoring (monitoring) system data transmission standard YD5098 Communication Bureau (Station) Lightning Protection and Grounding Engineering Design Specification

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3 Terms and definitions

The following terms and definitions apply to this standard.

Ambient air quality continuous monitoring the process of continuous sample collection, processing and analysis of ambient air quality using continuous monitoring instruments at monitoring points.

Point analyzers

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

Open path analyzers

Measuring the average air pollutant 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 Concentration of the instrument.

Zero drift

The instrument's reading and zero input after running the instrument at the specified time without maintenance, or adjustment.

The deviation between.

Range drift

Under the premise of not being repaired, maintained or adjusted, after the instrument is operated according to the specified time, the readings of the instrument and the known parameters the deviation between the values.

Unattended operation Under the premise of no manual maintenance and calibration, the long-term drift (>=7d) meets the time interval required by the indicator.

Standard state

The temperature is 273 K and the pressure is 101.325 kPa. The concentration of pollutants in this standard is under standard conditions.

concentration.

Ppm parts per million One millionth of a volume concentration.

Ppb parts per billion One billionth of a volume concentration.

3.10

Optical path

The length of the path through which the monitoring beam of the open path analysis

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instrument passes from the transmitting end of the light source to the receiving end.

3.11

Zero optical path

The open optical path analysis instrument is in a calibrated state, and the optical path from the light emitting end to the receiving end of the light is much smaller than the actual measurement.

The optical path of time is called zero path length.

3.12

Equivalent concentration Place a calibration cell in the measuring path of the instrument, and pass the standard gas. According to the ratio of the measuring path length to the length of the calibration cell, the quasi-gas concentration value is converted to the actual calibration concentration value, which is the equivalent concentration. All of this standard applies to open pathlength meters the standard gas concentration values of the method for detecting the technical indicators are all equivalent concentration values.

4 System composition and principle

The monitoring system is divided into a point continuous monitoring system and an open optical path continuous monitoring system. The monitoring system analysis method is shown in Table 1.

Table 1 Analytical methods recommended by the analytical instrument

Monitoring project point analysis instrument open optical path analysis instrument NO2 chemiluminescence differential absorption spectroscopy SO2 ultraviolet fluorescence differential absorption spectroscopy O3 ultraviolet absorption differential absorption spectroscopy CO non-dispersive infrared absorption method, gas filter related infrared absorption method /

4.1.1 System Composition

The monitoring system consists of sampling devices, calibration equipment, analytical instruments, data acquisition and transmission equipment, as shown in Figure 1.

Figure 1 Schematic diagram of the point continuous monitoring system

4.1.2 Sampling device

Multiple point analytical instruments can share a multi-branch sampling device for sample collection. The material and installation of the sampling device should be Does not affect instrument measurements.

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