

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा
स्वचालित मापन प्रणालियों की प्रदर्शन विशेषताएँ
भाग 4 स्थिर स्तोत्रों से नाइट्रोजन आक्साइड
[IS 17148 (भाग 4) का पहला पुनरीक्षण]

Draft Indian Standard

**Performance Characteristics of
Automated Measurement Systems**

Part 4 Nitrogen Oxides from Stationary Sources

[*First Revision of IS 17148 (Part 4)*]

(ICS 13.040.40)

Air Quality Sectional Committee, CHD 35

Last Date for Comments: 12th December 2024

Air Quality Sectional Committee, CHD 35

NATIONAL FOREWORD

(Formal clause shall be added later)

Deterioration in air quality due to pollution is a pertinent global problem. Monitoring industrial emissions so as to minimize its environmental and health effects is a major concern in a developing economy like India. Automated measurement systems (AMS) help in continuous monitoring of emissions. For accurate and effective functioning, these measurement systems shall fulfill certain performance criteria. This standard has been developed to ensure production and availability of good quality AMS instruments in India. These standard forms a part of a series of standards on performance characteristics of AMS and it is applicable for the AMS utilized for determination of nitrogen oxides from stationary source emissions.

This standard was first published in 2020 as an identical adoption of ISO 10849: 1996 under dual numbering. This Part specifies a method for the determination of nitrogen oxides (NO_x) in flue gas of stationary sources and describes the fundamental structure and the key performance characteristics of automated measuring systems.

This Indian standard has been published in several parts. The other parts in this series are:

Part 1 Carbon monoxide, carbon dioxide and oxygen from stationary sources

Part 2 Particulate Matter from Stationary Sources

Part 3 Sulfur Dioxide from Stationary Sources

Part 5 Determination of the mass concentration of ammonia in flue gas from Stationary Sources

This first revision of the standard has been brought out to adopt the latest version of ISO 10849 : 2022. In this revision following modification have been done:

- a) The structure and the components have been updated to be similar to the latest editions of e.g. ISO 12039 (measurement of CO, CO₂ and O₂), ISO 17179 (measurement of NH₃), ISO 13199 (measurement of total VOC), ISO 25140 (measurement of CH₄), ISO 21258 (measurement of N₂O);
- b) Clause 3 has been updated (addition or deletion and change in terms and definitions);
- c) A new analytical technique has been added (Fourier transform infrared spectroscopy) for measurement of NO and NO₂ or NO_x;
- d) The performance characteristics and criteria as well as QA/QC procedures have been changed to harmonize with latest ISO standards;
- e) Examples of performance test results and the results of uncertainty calculation have been added for NO and NO₂ or NO_x measurement.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker in the International Standard, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

The Committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard.

<i>International Standard No</i>	<i>Title</i>
ISO 9169	Air quality — Definition and determination of performance characteristics of an automatic measuring system
ISO 14956	Air quality — Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty

In this adopted standard, reference appears to certain International Standards where the standard atmospheric conditions to be observed are stipulated which are not applicable to tropical/subtropical countries. The applicable standard atmospheric conditions for Indian conditions are (27 ± 2) °C and (65 ± 5) percent, relative humidity and shall be observed while using this standard.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'

FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 10849: 2022

Note: The technical content of the document has not been enclosed as these are identical with the corresponding ISO Standard. For obtaining the copy of the complete ISO Standard, please contact:

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