



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

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**Gas analysis - Online automated measuring systems for
content of carbon monoxide, carbon dioxide and oxygen -
Determination of performance characteristics**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document uses the redrafting law to amend and adopt ISO 12039.2019 "Carbon monoxide and dioxide in fuel gas emitted by stationary sources

The performance characteristics of the automatic measurement system for the determination of the mass concentration of carbon and oxygen".

Compared with ISO 12039.2019, this document has more structural adjustments. Appendix A lists this document and ISO 12039.2019.

The chapter number comparison list.

Compared with ISO 12039.2019, this document has technical differences.

The set vertical single line (|) is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

The following editorial changes have been made to this document.

---Change the name of the file to "Gas Analysis of Carbon Monoxide Content, Carbon Dioxide Content and Oxygen Content Online Automatic Measurement Systematic Determination of performance characteristics";

---The description and calculation errors in ISO 12039.2019 have been corrected. The corrections and their reasons are given in Appendix C.

List;

---Change the response time of the in-situ measurement system in Table I.1, Table I.2 and Table I.4 to 90s;

---Revised references.

1 Scope

This document defines the terms, definitions, symbols and abbreviations of the online automatic measurement system (AMS), gives an introduction to AMS, describes

Describes the selection method of AMS, establishes the performance characteristics and judgment standards of AMS, quality assurance and quality control procedures, and measurement reports

What should be included.

This document is applicable to the extraction formula and principle for the determination of carbon monoxide (CO) content, carbon dioxide (CO₂) content and oxygen (O₂) content in gas.

Positional (non-removable) AMS.

2 Normative references

The content of the following documents constitutes an indispensable clause of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

GB/T 14850 Gas Analysis Vocabulary (GB/T 14850-2020, ISO 7504.2015, IDT)

GB/T 36090 Gas Analysis Online Automatic Measurement System Quality Assurance Guide

Conversion of GB/T 40870 gas analysis mixed gas composition data (GB/T 40870-2021, ISO 14912..2003,

IDT)

3 Terms and definitions

The following terms and definitions defined in GB/T 14850 and GB/T 36090 apply to this document.

3.1

Parallel measurements

The reference method is used to measure two points on the same plane in the same pipeline that are relatively close together with the AMS whose performance characteristics are to be determined.

Quantities, provide paired measurement values.

3.2

Measurand to be measured

The specific amount to be measured.

[Source. ISO /IEC Guide98-3.2008, B.2.9, with modification]

3.3

Referencematerial

Pure substances or mixtures with known concentrations and within the specified range, or equipment with known characteristics.

Note. Commonly used gas standard materials/standard samples, gas chambers, gratings or