



# SLOVENSKI STANDARD

## SIST EN 61207-1:1998

01-november-1998

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### Expression of performance of gas analyzers - Part 1: General (IEC 61207-1:1994)

Expression of performance of gas analyzers -- Part 1: General

Angabe zum Betriebsverhalten von Gasanalysatoren -- Teil 1: Allgemeines

Expression des qualités de fonctionnement des analyseurs de gaz -- Partie 1:  
Généralités

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Ta slovenski standard je istoveten z: **EN 61207-1:1994**

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#### **ICS:**

71.040.40      Kemijska analiza                      Chemical analysis

**SIST EN 61207-1:1998**

**en**

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EUROPEAN STANDARD

EN 61207-1

NORME EUROPEENNE

EUROPÄISCHE NORM

April 1994

UDC 621.317.79:543.27:543.25

Descriptors: Gaseous mixtures, constituents in gaseous mixtures, gas analyzers, performance of gas analyzers, general aspects on performance of gas analyzers

## ENGLISH VERSION

Expression of performance of gas analyzers  
Part 1: General  
(IEC 1207-1:1994)

Expression des qualités de  
fonctionnement des analyseurs  
de gaz  
Partie 1: Généralités  
(CEI 1207-1:1994)

Angabe zum  
Betriebsverhalten von  
Gasanalysatoren  
Teil 1: Allgemeines  
(IEC 1207-1:1994)

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**iTeh STANDARD PREVIEW**

This European Standard was approved by CENELEC on 1994-03-08. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

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Ref. No. EN 61207-1:1994 E

### FOREWORD

The text of document 65D(CO)5, as prepared by Sub-Committee 65D: Analyzing equipment, of IEC Technical Committee 65: Industrial-process measurement and control, was submitted to the IEC-CENELEC parallel vote in September 1993.

The reference document was approved by CENELEC as EN 61207-1 on 8 March 1994.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-03-15
- latest date of withdrawal of conflicting national standards (dow) 1995-03-15

For products which have complied with the relevant national standard before 1995-03-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-03-15.

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given only for information. In this standard, annexes A and B are informative and annex ZA is normative.

### ENDORSEMENT NOTICE

The text of the International Standard IEC 1207-1:1994 was approved by CENELEC as a European Standard without any modification.



## ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD  
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE : When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication -----	Date ----	Title -----	EN/HD -----	Date ----
50(301)	1983	International Electrotechnical Vocabulary (IEV) - Chapter 301: General terms on measurements in electricity	-	-
50(302)	1983	Electrical measuring instruments	-	-
50(303)	1983	Electronic measuring instruments	-	-
68	series	Environmental testing	HD 323 EN 60068	series
278	1968	Documentation to be supplied with	HD 312 S1	1977
278A	1974	electronic measuring apparatus First supplement		
348*	1978	Safety requirements for electronic measuring apparatus	-	-
359	1987	Expression of the performance of electrical and electronic measuring equipment	-	-
381-1	1982	Analogue signals for process control systems - Part 1: Direct current signals	HD 452.1 S1	1984
382	1991	Analogue pneumatic signal for process control systems	EN 60382	1993
654*	series	Operating conditions for industrial-process measurement and control equipment	HD 413	series

\* IEC 348 is superseded by IEC 1010-1:1990 + A1:1992 which are harmonized as EN 61010-1:1993  
IEC 654-1:1993 was harmonized as EN 60654-1:1993. The title of this second edition is: Industrial-process measurement and control equipment - Operating conditions - Part 1: Climatic conditions

IEC Publication -----	Date -----	Title -----	EN/HD -----	Date -----
770	1984	Methods of evaluating the performance of transmitters for use in industrial-process control systems	-	-
801-1	1984	Electromagnetic compatibility for industrial-process measurement and control equipment - Part 1: General introduction	HD 481.1 S1	1987
801-2	1991	Part 2: Electrostatic discharge requirements	EN 60801-2	1993
801-3	1984	Part 3: Radiated electromagnetic field requirements	HD 481.3 S1	1987
801-4	1988	Part 4: Electrical fast transient/burst requirements	-	-
1207-2	-	Expression of performance of gas analyzers - Part 2: Oxygen in gas	-	-

## Other publications:

- ISO 31-0:1981 - General principles concerning quantities, units and symbols  
 ISO 1000:1981 - SI units and recommendations for the use of their multiples and of certain other units  
 ISO 8158:1985 - Evaluation of the performance characteristics of gas analyzers

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
1207-1

Première édition  
First edition  
1994-02

Expression des qualités de fonctionnement  
des analyseurs de gaz –

Partie 1:

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

Expression of performance of  
gas analyzers –

<https://standards.iteh.ai/catalog/standards/sist/e5b98b0a-12aa-4e9b-8443-c95bd5a3f0aa/sist-en-61207-1-1998>

Part 1:

General

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

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For price, see current catalogue

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## EXPRESSION OF PERFORMANCE OF GAS ANALYZERS -

## Part 1: General

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

SIST EN 61207-1:1998

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 International Standard IEC 1207-1 has been prepared by sub-committee 65D: Analyzing equipment, of IEC technical committee 65: Industrial-process measurement and control.

The text of this standard is based on the following documents:

DIS	Report on Voting
65D(CO)5	65D(CO)6

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

IEC 1207-1 constitutes part 1 of the 1207 series of publications under the general title: Expression of performance of gas analyzers.

Part 1: 1993, General

Part 2: 1993, Oxygen in gas

Part 6: 1993, Photometric analyzers

Part 7: 1993, Infra-red analyzers

Parts 3, 4 and 5 are under consideration.

Annexes A and B are for information only.

## EXPRESSION OF PERFORMANCE OF GAS ANALYZERS -

### Part 1: General

#### 1 Scope and object

This part of IEC 1207 is applicable to gas analyzers used for the determination of certain constituents in gaseous mixtures.

It includes the terminology, definitions, requirements for statements by manufacturers and tests that are common to all gas analyzers. Other standards in this series, for example IEC 1207-2, describe those aspects that are specific to certain types (utilizing high-temperature ceramic sensors).

This part is in accordance with the general principles set out in IEC 359 and IEC 770.

It is applicable to analyzers specified for permanent installation in any location (indoors or outdoors) and to such analyzers utilizing either a sample handling system or an *in situ* measurement technique.

It is applicable to the complete analyzer when supplied by one manufacturer as an integral unit, comprised of all mechanical, electrical and electronic portions. It also applies to sensor units alone and electronic units alone when supplied separately or by different manufacturers.

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For the purpose of this part, any regulator for mains-supplied power or any non-mains power supply, provided with the analyzer or specified by the manufacturer, is considered part of the analyzer whether it is integral with the analyzer or housed separately.

Safety requirements are dealt with in IEC 348 and IEC 1010.

If one or more components in the sample is flammable, and air or another gas mixture containing oxygen or other oxidizing component is present, then the concentration range of the reactive components shall be limited to levels which are not within flammability limits.

Standard range of analogue d.c. current and pneumatic signals used in process control systems are dealt with in IEC 381-1 and IEC 382.

Specification for values for the testing of influence quantities can be found in IEC 654.

Requirements for documentation to be supplied with instruments are dealt with in IEC 278 and IEC 278A.

Requirements for general principles concerning quantities, units and symbols are dealt with in ISO 1000. See also ISO 31.

This part does not apply to:

- accessories such as recorders, analogue-to-digital converters or data acquisition systems, used in conjunction with the analyzer except that when two or more such analyzers are combined and sold as a subsystem and a single electronic unit is supplied to provide continuous measurement of several properties, that read-out unit is considered to be part of the analyzer. Similarly, e.m.f.-to-current or e.m.f.-to-pressure converters which are an integral part of the analyzer are included.

The object of this part is:

- to specify the general aspects in the terminology and definitions related to the performance of gas analyzers used for the continuous measurement of gas composition;
- to unify methods used in making and verifying statements on the functional performance of such analyzers;
- to specify which tests should be performed in order to determine the functional performance and how such tests should be carried out.
- to provide basic documents to support the application of standards of quality assurance ISO 9001, ISO 9002 and ISO 9003.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1027. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1027 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of the IEC and ISO maintain registers of currently valid International Standards.

IEC 50 (301, 302, 303): 1983, *International Electrotechnical Vocabulary (IEV)*

Chapter 301: *General terms on measurements in electricity*

Chapter 302: *Electrical measuring instruments*

Chapter 303: *Electronic measuring instruments*

IEC 68: *Environmental testing*

IEC 278: 1968, *Documentation to be supplied with electronic measuring apparatus*

IEC 278A: 1974, *Documentation to be supplied with electronic measuring apparatus – First supplement*

IEC 348: 1978, *Safety requirements for electronic measuring apparatus*

IEC 359: 1987, *Expression of the performance of electrical and electronic measuring equipment*

IEC 381-1: 1982, *Analogue signals for process control systems – Part 1: Direct current signals*

IEC 382: 1991, *Analogue pneumatic signal for process control systems*