IEC 61207-1

Edition 2.0 2010-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Expression of performance of gas analyzers – Part 1: General

Expression des performances des analyseurs de gaz – Partie 1: Généralités

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
CODE PRIX W

ICS 19.080; 71.040.40

ISBN 978-2-88910-947-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 1: General

FOREWORD

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International Standard IEC 61207-1 has been prepared by subcommittee 65B: Devices and process analysis, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 1994 and constitutes a technical revision.

The significant technical changes with respect to the first edition are the following:

a) All references (normative and informative) have been updated, deleted or added, as appropriate.
b) All the terms and definitions relating to this International Standard have been updated.
c) All references to "errors" have been replaced by "uncertainties" and appropriate updated definitions applied.
d) Where only one value is quoted for a performance specification, such as intrinsic uncertainty, linearity uncertainty or repeatability throughout a measurement range, this

has now been defined as the maximum value, rather than an average or “representative” value. This was previously undefined.

e) Where zero and 100 % span calibration gases are used, there is now a defined requirement that the analyser must be able to respond within its standard performance specifications beyond its normal measurement range, to allow for any under or over response of the instrument to be recorded.

f) A new Annex A has been added giving recommended standard values of influence.

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

FDIS	Report on voting
65B/741/FDIS	65B/752/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61207 series, under the general title *Expression of performance of gas analyzers*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

EXPRESSION OF PERFORMANCE OF GAS ANALYZERS –

Part 1: General

1 Scope and object

This part of IEC 61207 is applicable to gas analyzers used for the determination of certain constituents in gaseous mixtures.

This part of IEC 61207 specifies the terminology, definitions, requirements for statements by manufacturers and tests that are common to all gas analyzers. Other international standards in this series, for example IEC 61207-2, describe those aspects that are specific to certain types (utilizing high-temperature electrochemical sensors).

This part IEC 61207 is in accordance with the general principles set out in IEC 60359 and IEC 60770.

This standard 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.

This standard 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.

For the purposes of this standard, 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 61010-1.

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 are 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 60381-1 and IEC 60382.

Specifications for values for the testing of influence quantities can be found in IEC 60654.

Requirements for documentation to be supplied with instruments are dealt with in IEC 61187.

Requirements for general principles concerning quantities, units and symbols are dealt with in ISO 1000. See also ISO 31-0.

This part of IEC 61207 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.