SLOVENSKI STANDARD

SIST EN 60746-3:2004

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Expression of performance of electrochemical analyzers - Part 3: Electrolytic conductivity

ICS 71.040.40

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EUROPEAN STANDARD

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EN 60746-3

October 2002

ICS 17.020; 71.040

English version

Expression of performance of electrochemical analyzers
Part 3: Electrolytic conductivity
(IEC 60746-3:2002)

Expression des qualités
de fonctionnement
des analyseurs électrochimiques
Partie 3: Conductivité électrolytique
(CEI 60746-3:2002)

Angabe zum Betriebsverhalten
von elektrochemischen Analysatoren
Teil 3: Elektrolytische Leitfähigkeit
(IEC 60746-3:2002)

This European Standard was approved by CENELEC on 2002-09-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

Ref. No. EN 60746-3:2002 E

Foreword

The text of document 65D/85/FDIS, future edition 2 of IEC 60746-3, prepared by SC 65D, Analyzing equipment, of IEC TC 65, Industrial-process measurement and control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60746-3 on 2002-09-01.

This publication shall be used in conjunction with IEC 60746-1 [1)].

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2003-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-09-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes C and ZA are normative and annexes A, B and D are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60746-3:2002 was approved by CENELEC as a European Standard without any modification.

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1) At draft stage.

Annex ZA
(normative)

Normative references to international publications with their corresponding 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 (including amendments).

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

Publication	Year	Title	EN/HD	Year
IEC 60746-1	- [1)]	Expression of performance of electrochemical analyzers Part 1: General	-	-

[1)] Undated reference.

INTERNATIONAL STANDARD

IEC 60746-3

Second edition
2002-06

Expression of performance of electrochemical analyzers –

Part 3: Electrolytic conductivity

Expression des qualités de fonctionnement des analyseurs électrochimiques –

Partie 3: Conductivité électrolytique

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPRESSION OF PERFORMANCE OF ELECTROCHEMICAL ANALYZERS –

Part 3: Electrolytic conductivity

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 co-operation 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 express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, 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.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60746-3 has been prepared by subcommittee 65D: Analyzing equipment, of IEC technical committee 65: Industrial-process measurement and control.

This second edition cancels and replaces the first edition, published in 1985, and constitutes a technical revision.

This standard shall be used in conjunction with IEC 60746-1.

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

FDIS	Report on voting
65D/85/FDIS	65D/87/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 3.

Annex C forms an integral part of this standard.

Annexes A, B and D are for information only.

IEC 60746 consists of the following parts, under the general title *Expression of performance of electrochemical analyzers:*

Part 1: General

Part 2: pH value

Part 3: Electrolytic conductivity

Part 4: Dissolved oxygen in water measured by membrane covered amperometric sensors

Part 5: Oxidation-reduction potential or redox potential

Part 6: Conductivity effect of foreign ions in ultrapure waters, from combined conductivity and pH[1)]

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

The contents of the corrigendum of January 2003 have been included in this copy.

1) Under consideration.

EXPRESSION OF PERFORMANCE OF ELECTROCHEMICAL ANALYZERS –

Part 3: Electrolytic conductivity

1 Scope

This part of IEC 60746 is intended

– to specify terminology, definitions and requirements for statements by manufacturers for analyzers, sensor units, and electronic units used for the determination of the electrolytic conductivity of aqueous solutions;

– to establish performance tests for such analyzers, sensor units and electronic units;

– to provide basic documents to support the applications of quality assurance standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60746-1, *Expression of performance of electrochemical analyzers – Part 1: General*

3 Definitions

For the purpose of this part of IEC 60746, the definitions of IEC 60746-1 apply, together with the following definitions.

3.1
electrolytic conductance
current divided by the potential difference in the case of ionic charge transport within an electrolytic solution filling a conductivity cell:

$$G = \frac{I}{U}$$

where

I is the current through the electrolyte, in amperes (A);

U is the potential difference applied across the electrodes, in volts (V);

G is the electrolytic conductance, in siemens (S).

Electrolytic resistance is the reciprocal of electrolytic conductance with the ohm (Ω) as the unit of measurement