

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Expression of performance of electrochemical analyzers –  
Part 4: Dissolved oxygen in water measured by membrane-covered  
amperometric sensors**

**Expression des qualités de fonctionnement des analyseurs électrochimiques –  
Partie 4: Oxygène dissous dans l'eau mesuré par des capteurs ampérométriques  
recouverts d'une membrane**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**EXPRESSION OF PERFORMANCE OF  
ELECTROCHEMICAL ANALYZERS –****Part 4: Dissolved oxygen in water measured  
by membrane-covered amperometric sensors**

## FOREWORD

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International Standard IEC 60746-4 has been prepared by subcommittee 65B: Measurement and control devices, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 1992. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) terms and definitions have been revised to meet the requirements of ISO/IEC Directives Part 2:2016.
- b) ISO 5814:2012 is cited as reference for solubility tables of dissolved oxygen in water with variable salt content at different pressure and temperature.

The text of this International Standard is based on the following documents:

| FDIS          | Report on voting |
|---------------|------------------|
| 65B/1128/FDIS | 65B/1138/RVD     |

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

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

A list of all parts in the IEC 60746 series, published under the general title *Expression of performance of electrochemical analyzers*, can be found on the IEC website.

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

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- withdrawn,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

## EXPRESSION OF PERFORMANCE OF ELECTROCHEMICAL ANALYZERS –

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

#### 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 dissolved oxygen partial pressure or concentration;
- to establish performance tests for such analyzers, sensor units and electronic units;
- to provide basic documents to support the applications of quality assurance standards [1]<sup>1</sup>.

This document applies to analyzers using membrane covered amperometric sensors. It applies to analyzers suitable for use in water containing liquids, ultrapure waters, fresh or potable water, sea water or other aqueous solutions, industrial or municipal waste water from water bodies (e.g. lakes, rivers, estuaries), as well as for industrial process streams and process liquids. Whilst in principle amperometric oxygen-analyzers are applicable in gaseous phases, the expression of performance in the gas phase is outside the scope of this document.

This document is applicable to analyzers specified for permanent installation in any location (indoors or outdoors) using membrane-covered amperometric sensors.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60746-1:2003, *Expression of performance of electrochemical analyzers – Part 1: General*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60746-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.