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

GB/T 20245.4-2013

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

电化学分析器性能表示 第4部分：采用覆膜电流式传感器测量水中溶解氧

(English Translation)

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Foreword

GB/T 20245 "performance of electrochemical analyzers" is divided into the following five sections.

--- Part 1. General;

Part --- Article 2. pH value;

--- Part 3. electrolyte conductivity;

--- Part 4. using coated current sensor measurement of dissolved oxygen;

--- Part 5. redox potential.

This section GB/T Part of 420,245.

This section drafted in accordance with the rules of GB/T 1.1-2009 and GB/T 20000.2-2009 given.

This section uses the translation method is equivalent to using IEC 60746-4:1992 "performance of electrochemical analyzers - Part 4. The current film Sensors measuring dissolved oxygen. " this part of IEC 60746-4:1992 technical differences and their reasons are as follows.

- a) Delete the international standard concentration units 3.4 ppm, ppb;
- b) an increase in work 6.3.1 error part; because the international standard IEC 746-82 referenced content in 6.7.1, in GB/T 20245.1-2006 (IEC 60746-1:2003, IDT) is not involved, it is supplemented by the legacy content.

For ease of use, this section made the following editorial changes.

--- GB/T 20245.4 standard text used in "this part of GB/T 20245 of" instead of "IEC 60746 Part of the present";

--- Decimal symbol used in place of ",". " ";

--- Remove the foreword to international standards.

Please note that some of the content of this document may involve patents. Release mechanism of the present document does not assume responsibility for the identification of these patents.

This part is proposed by China Machinery Industry Federation.

This part of the measurement and control of Standardization Technical Committee (SAC/TC124) is administered by the National industrial processes.

This section drafted by. China Instrument Industry Association, Hangzhou condensing Environmental Protection Technology Co., Shanghai Electronics Shares have scientific instruments Ltd., Sichuan-Chongqing Analytical Instruments Co., Ltd., China Institute of Metrology, Hailei magnetic sensor Technology Co., Ltd., Shanghai metering Testing Technology Research Institute, Beijing Institute of Metrology detection, Beijing Institute for the Analysis instruments.

1 Scope

This section GB/T 20245 specifies the performance test sensor for measuring dissolved oxygen content of the aqueous solution, and an electronic analyzer unit Factory inspection requirements and proposed terms and definitions.

This section applies to the use of coating a current sensor for continuous monitoring of dissolved oxygen partial pressure or content analyzer, also suitable for measuring drinking Water, water, industrial wastewater, sewage and storage tanks industrial processes (such as lakes, rivers, harbors water) of dissolved oxygen analyzer.

For discussion of the analyzer using a current sensor film is not fully applicable to the non-film electrochemical sensor, but can be used as a general reference literature.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 20245.1-2006 performance of electrochemical analyzers represent - Part 1. General (IEC 60746.1:2003, IDT)

3 Terms, definitions and symbols

GB/T 20245.1-2006 and as defined in the following terms, definitions and symbols apply to this document.

3.1 Symbol

pO_2 --- vapor-liquid equilibrium under conditions of partial pressure of oxygen in the gas phase.

CO_2 --- dissolved oxygen concentration in the solution.

Film Current Sensor membranecoveredamperometricsensors Sensor generally comprises a cathode (typically manufactured material such as gold, silver or platinum) and an anode (manufactured material is typically silver or lead), Oxygen the child is reduced at the cathode, reversible oxidation reaction at the anode; a suitable electrolyte; a suitable sensor for isolating and to limit the spread of the polymer film of the test medium, the other function is to make the sensor electrode and an electrolyte and a number of normally present in water samples Contaminants isolation. Coating may be a current type oxygen sensor cell may be a primary battery.

3.3 Influence quantity

3.3.1

Temperature Temperature changes limit the proliferation of film oxygen permeability, which could affect performance coating current type oxygen sensor, which is a reversible over Away. When the sample temperature changes, the solubility of oxygen in the sample will change, therefore, for direct reading instrument output density, through Often take compensatory measures to compensate for the oxygen solubility with temperature changes.