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**DL**

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

**DL/T 1498.2-2016**

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**Technical specification for on-line monitoring device of  
transformation equipment - Part 2: on-line monitoring device of  
gases dissolved in transformer oil**

**(English Translation)**

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### Foreword

DL/T 1498 "Technical specification for on-line monitoring device of transformation equipment" is divided into five parts.

- Part 1. General;
- Part 2. Online monitoring device for dissolved gases in transformer oil;
- Part 3. On-line insulation monitoring device of capacitive equipment and metal oxide arrester;
- Part 4. On-line monitoring device for gas-insulated metal-enclosed switchgear very high frequency local discharge;
- Part 5. On-line monitoring device for transformer iron core grounding current.

This part is part 2.

This part was proposed by the China Electricity Council.

This part shall be under the jurisdiction of the National Electric Power Equipment State Maintenance and Online Monitoring Standardization Technical Committee.

The responsible drafting organizations of this part. China Electric Power Research Institute.

The main participating drafting organizations of this part. State Grid Anhui Electric Power Company, State Grid Hebei Electric Power Company, Guangdong Power Grid Company Limited Electric Power Research Institute,

Ningbo Science and Technology Monitoring Technology Co., Ltd., Henan  
Zhongfen Instrument Co., Ltd., Siyuan Electric Co., Ltd.

## 1 Scope

This part specifies the terms and definitions, composition, classification, technical requirements, test items and requirements, inspection rules and marking, packaging, transportation and storage of the on-line monitoring device of gases dissolved in transformer oil.

This part is applicable to the design, production, type selection, operation and maintenance of the on-line monitoring device of gases dissolved in transformer oil.

## 2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB/T 191 Packaging - Pictorial marking for handling of goods

GB/T 17623 Determination of component contents of gases dissolved in insulating oil by gas chromatography method

DL/T 722-2014 Guide to the analysis and the diagnosis of gases dissolved in transformer oil

DL/T 1498.1-2016 Technical specification for on-line monitoring device of transformation equipment - Part 1. General

DL/T 1432.2 Testing specification for on-line monitoring device of transformation equipment - Part 2. Online monitoring device for dissolved gas in transformer oil

### **3 Terms and definitions**

The following terms and definitions apply to this document.

#### **3.1**

On-line monitoring device of gases dissolved in transformer oil  
dissolved in transformer oil

#### **4.1 Oil sample collection and gas-oil separation part**

The oil sample collection part is connected with the oil tank valve of the monitored equipment to complete the sampling of the transformer oil. AND the gas-oil separation part realizes the separation of the gases dissolved in oil from the transformer oil.

#### **4.2 Gas detection part**

Gas detection part is used for the detection of the mixed gas components after gas-oil separation.

#### **4.3 Data collection and control part**

It is used to complete the signal collection and data processing, AND to realize the automatic control of the analysis process.

#### **4.4 Communication part**

The communication part is used to realize the communication between other equipment and this device, AND it shall use the standard communication interface and protocol which comply with the monitoring data and control command transmission requirements.

#### **4.5 Auxiliary part**

The auxiliary part refers to other relevant parts which are used to ensure that the device is working properly, such as temperature control, gas cylinders, piping and so on.

## 5 Classification of on-line monitoring device of gases

dissolved in transformer oil

### 5.1 Multi-component on-line monitoring device

It refers to the monitoring device which monitors at least 6 components of gases dissolved in transformer oil, which is used for defect or fault alarming and fault type diagnosis. The monitoring items include hydrogen ( $H_2$ ), methane ( $CH_4$ ), ethane ( $C_2H_6$ ), ethylene ( $C_2H_4$ ), acetylene ( $C_2H_2$ ), and carbon monoxide ( $CO$ ). The commonly used device is the monitoring device of 7 characteristic gases including carbon dioxide ( $CO_2$ ). AND the oxygen ( $O_2$ ) and nitrogen ( $N_2$ ) are optional monitoring items.

### 6.4 Sampling piping requirements

The oil piping shall be made of stainless steel or copper and other materials.

Outside the oil piping, it may be added with piping tracing heat belt,...

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