

ICS 29.240.11

CCS K 41

DL

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

DL/T 1432.1-2015

**Testing specification for on-line monitoring device of
transformation equipment - Part 1: General testing specification**

变电设备在线监测装置检验规范 第1部分：通用检验规范

(English Translation)

Issued on: April 2, 2015

Implemented on: September 1, 2015

Issued by: National Energy Administration

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Test classification and items...	6
4 Test methods and requirements...	8

Foreword

This Part of DL/T 1432 was drafted in accordance with the rules given in GB/T

1.1-2009 Directives for standardization - Part 1. Structure and drafting of standards.

DL/T 1432 Testing specification for on-line monitoring device of transformation equipment is divided into 5 parts.

- Part 1. General testing specification;
- Part 2. On-line monitoring device of gases dissolved in transformer oil;
- Part 3. On-line insulation monitoring device of capacitive equipment and metal-oxide surge arrester;
- Part 4. On-line partial discharge monitoring device (UHF) of gas insulated switchgear;
- Part 5. On-line monitoring device of the earthing current of power transformer core.

This Part is Part 1 of DL/T 1432. This Part contains the test items, test methods and methods for determining the test results common to the on-line monitoring device, and shall be used in conjunction with the special testing specification for the relevant on-line monitoring device.

This Standard was proposed by the China Electricity Council.

This Standard shall be under the jurisdiction of the National Technical Committee for Standardization of Condition-based Maintenance and On-line

Monitoring of Electrical Power Units.

Major drafting organization of this Standard. China Electric Power Research Institute.

Major participating organizations of this Standard. State Grid Zhejiang Electric Power Company, Electric Power Research Institute of Guangdong Power Grid Corporation, North China Electric Power University, Beijing Sifang Automation Co. Ltd, Ningbo Ligong Online Monitoring Technology Co., Ltd, and Beijing Sintech Electric Technology Co., Ltd.

Main drafters of this Standard. Yuan Shuai, Yan Chunyu, Gao Keli, Bi Jiangang, Shi Yanjie, Liu Ming, Wang Feng, Peng Jiang, Wu Liyuan, Yang Yuan, Gong Yanpeng, Yang Ning, Chang Wenzhi, Jiao Fei, Ying Gaoliang, He Hongming,

Testing specification for on-line monitoring

device of transformation equipment -

Part 1. General testing specification

1 Scope

This Standard specifies the test classification and items, test methods and requirements, rules for testing determination common to the on-line monitoring device of transformation equipment.

This Standard is applicable to the type test, exit-factory test, commissioning test and field test for the on-line monitoring device of transformation equipment.

2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

GB/T 2423.1 Environmental testing for electric and electronic products - Part

2 Test methods - Tests A. Cold

GB/T 2423.2 Environmental testing for electric and electronic products - Part

2 Test methods - Tests B. Dry heat

GB/T 2423.3 Environmental testing for electric and electronic products - Part

2 Testing method - Test Cab. Damp heat, steady state

GB/T 2423.4 Environmental testing for electric and electronic products - Part

2 Test method - Test Db. Damp heat, cyclic (12h + 12h cycle)

GB 4208 Degrees of protection provided by enclosure (IP code)

GB/T 11287 Electrical relays - Part 21. Vibration, shock, bump and seismic tests on measuring relays and protection equipment - Section One. Vibration tests (sinusoidal)

GB/T 14537 Shock and bump tests on measuring relays and protection equipment

GB/T 17626.2 Electromagnetic compatibility - Testing and measurement techniques - Electrostatic discharge immunity test

GB/T 17626.3 Electromagnetic compatibility - Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

GB/T 17626.4 Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient / burst immunity test

GB/T 17626.5 Electromagnetic compatibility - Testing and measurement techniques - Surge immunity test

GB/T 17626.6 Electromagnetic compatibility - Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

GB/T 17626.8 Electromagnetic compatibility - Testing and measurement techniques - Power frequency magnetic field immunity test

GB/T 17626.9 Electromagnetic compatibility - Testing and measurement

techniques - Pulse magnetic field immunity test

GB/T 17626.10 Electromagnetic compatibility - Testing and measurement

techniques - Damped oscillatory magnetic field immunity test

GB/T 17626.11 Electromagnetic compatibility - Testing and measurement

techniques - Voltage dips, short interruptions and voltage variations immunity tests

3.1 Test items

The tests for the on-line monitoring device are divided into type test, exit-factory test, commissioning test and field test. The test items are shown in Table 1.

Table 1 -- Test Items

Serial

No. Test items Type test Exit-factory test Commissioning test Field test

3.4 Commissioning test

The commissioning test is carried out by the operating organization, after the device is installed and before it is officially put into operation. The device can only be operated after passing the test.

3.5 Field test

The field test is carried out by a field operating organization or a qualified testing institution to the performance of the devices to be tested on site. Field tests are generally divided into two cases.

- a) regular routine verification, with a cycle of 1 to 2 years; and
- b) if necessary.

4.1 Test conditions

The requirements for the test conditions are as follows.

- a) laboratory ambient temperature. +15°C ~ +35°C (outdoor tests are not required);
- b) relative humidity. 25% ~ 75%;