

ICS 13.100
CCS J 04



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

GB/T 33218-2025

Replacing GB/T 33218-2016

**Equipment structure health monitoring - Equipment health
monitoring method based on fiber optic sensing technology**

设备结构健康监测 基于光纤传感技术的设备健康监测方法

Issued on: May 30, 2025

Implemented on: December 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 33218-2016 "Non-destructive testing - Equipment health monitoring method based on optical fiber sensing technology" and GB/T 33218- Compared with 2016, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2016 edition);
- b) Added terms and definitions (see Chapter 3);
- c) added an overview of the methodology (see Chapter 4);
- d) Added monitoring sensors (see Chapter 5);
- e) Added monitoring equipment (see Chapter 6);
- f) Added health management platform (see Chapter 7);
- g) Added equipment health monitoring implementation process (see Chapter 8);
- h) Added health monitoring system installation and maintenance (see Chapter 9).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Equipment Structural Health Monitoring Standardization Working Group (SAC/SWG22).

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This document was first published in 2016 and this is the first revision.

Equipment structural health monitoring based on fiber optic sensing technology Equipment Health Monitoring Methods

1 Scope

This document describes a method for equipment health monitoring based on fiber optic sensing technology, including data analysis methods, health diagnosis methods, and damage/ Fault prediction methods and related requirements.

This document is applicable to health monitoring during the operation of mechanical equipment, wind power equipment and other equipment.

2 Normative references

GB/T 5226.1

GB/T 14412

GB/T 19873.1

GB/T 19873.2

GB/T 23713.1

GB/T 33213

GB/T 39417

GB 50171

3 Terms and definitions

The terms and definitions defined in GB/T 39417 and the following apply to this document.

3.1

Real-time online monitoring of key characteristic parameters for safe operation of equipment is carried out to obtain health information of the equipment.

Note. This document focuses on real-time health monitoring of key parts such as the metal structure and transmission mechanism (reducer, motor) of the equipment.

3.2 Comprehensive monitoring of health status

It is a comprehensive equipment that integrates the monitoring functions of equipment metal structure and transmission mechanism, and can realize the health monitoring of equipment metal structure and transmission mechanism.

3.3 health diagnosis healthdiagnosis

Using the stress, vibration and other related data obtained by health monitoring equipment, combined with data processing methods, damage characteristic parameters are extracted to construct diagnostic Model is the process of judging the health status of metal structures and transmission mechanisms.

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