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Interested committees:

Title: Draft BS ISO 16079-1 Condition monitoring and diagnostics of wind turbines. Part 1: General guidelines.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 16079-1

Condition monitoring and diagnostics of wind turbines —

Part 1: General guidelines

*Surveillance et diagnostic d'état des éoliennes de production
d'électricité —*

Partie 1: Lignes directrices générales

ICS: 27.180

ISO/TC 108/SC 5

Secretariat: **SA**

Voting begins on:
2025-01-09

Voting terminates on:
2025-04-03

This document is circulated as received from the committee secretariat.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 108, Mechanical vibration, shock and condition monitoring, Subcommittee SC 5, Condition monitoring and diagnostics of machine systems.

This second edition cancels and replaces the first edition (ISO 16069-1:2017), which has been editorially revised.

A list of all parts in the ISO 16079 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Power production from wind turbines is growing exponentially on the global energy market. As a consequence, predictability of the production from wind power plants has become as crucial as predictability of power production from conventional power plants. As for conventional power plants, an efficient maintenance programme for wind power plants adds significant value to the reliability and predictability of the supply of energy. This document is the first in a series of International Standards covering the application of condition monitoring to wind turbines. It is an application of the recommendations and best practices described in the generic standards developed under ISO/TC 108.

Aims of the ISO 16079 series

This document and subsequent documents in the ISO 16079 aims are to allow manufacturers of wind turbines, operators of wind turbines and manufacturers of condition monitoring systems for wind turbines to share common concepts and terminology; and to provide a methodology whereby users of this document can prioritize and select which components shall be monitored and which failure modes shall be detected, in order to obtain the most efficient condition monitoring system with regards to cost, detection capability, complexity of monitoring system and methods, and available resources and skill level of staff in the monitoring body.

It is not the intention of this document or subsequent documents in the ISO 16079 series to cover any aspects of safety monitoring systems.

Time-proven experience

The monitoring strategies presented in the ISO 16079 series are based on time-proven experience. Only conservative, well-proven methods and best practices are applied. This means that detection of certain failure modes may be left out if the behaviour of the failure modes and their related symptoms are not well-documented. As new monitoring techniques mature, this document will be updated accordingly.

Condition monitoring and diagnostics of wind turbines —

Part 1: General guidelines

1 Scope

This document gives guidelines which provide the basis for choosing condition monitoring methods used for failure mode detection, diagnostics and prognostics of wind power plant components.

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.

ISO 2041, *Mechanical vibration, shock and condition monitoring – Vocabulary*

ISO 13372:2012, *Condition monitoring and diagnostics of machines — Vocabulary*

ISO 17359:2003, *Condition monitoring and diagnostics of machines — General guidelines*

ISO 13373, *Condition monitoring and diagnostics of machines — Vibration condition monitoring (all parts)*

ISO 13374, *Condition monitoring and diagnostics of machines — Data processing, communication and presentation (all parts)*

ISO 13379-1:2012, *Condition monitoring and diagnostics of machines — Data interpretation and diagnostics techniques — Part 1: General guidelines*

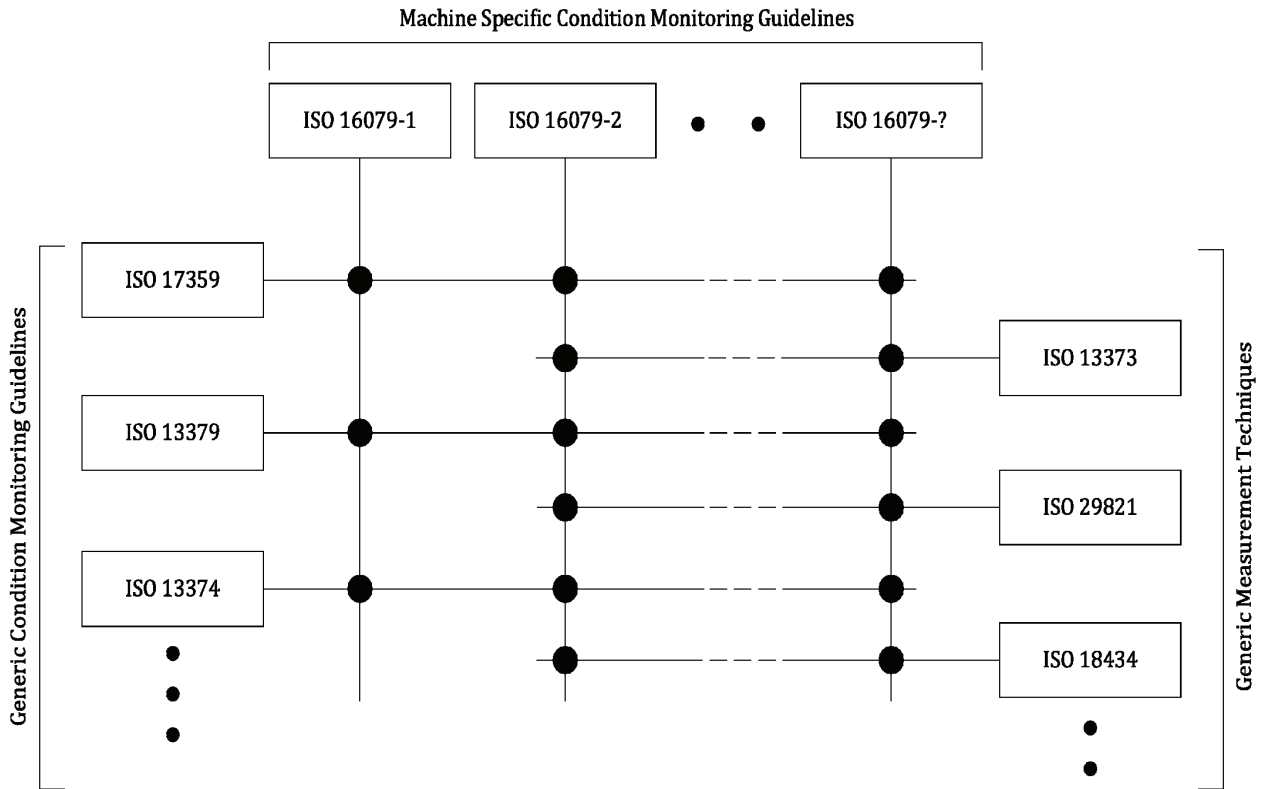


Figure 1 — Links between the machine-specific International Standards and the generic International Standards

ISO 10816-21, *Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts — Part 21: Horizontal axis wind turbines with gearbox*

IEC 61400-25, 6, *Wind energy generation systems - Part 25-1: Communications for monitoring and control of wind power plants - Overall description of principles and models*

IEC 61400-25, 6, *Wind energy generation systems - Part 25-6: Communications for monitoring and control of wind power plants - Logical node classes and data classes for condition monitoring complements*

DNV·GL guideline, DNV·GL, *Guideline for the Certification of Condition Monitoring Systems for Wind Turbines - Edition 2013*

ISO 55000:2014, *Asset management – Overview, principles and terminology*

ISO/IEC 23894:2023, *Information technology — Artificial intelligence — Guidance on risk management*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2041 and ISO 13372 and the following apply.

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

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