SLOVENSKI STANDARD
SIST EN IEC 60599:2022

01-september-2022

Nadomešča:
SIST EN 60599:2016

Električna oprema, polnjena z mineralnim oljem, v delovanju - Vodilo za tolmačenje rezultatov analize raztopljenih in prostih plinov

Mineral oil-filled electrical equipment in service - Guidance on the interpretation of dissolved and free gases analysis

In Betrieb befindliche, mit Mineralöl befüllte elektrische Geräte - Leitfaden zur Interpretation der Analyse gelöster und freier Gase

Matériels électriques remplis d'huile minérale en service - Lignes directrices pour l'interprétation de l'analyse des gaz dissous et des gaz libres

Ta slovenski standard je istoveten z: **EN IEC 60599:2022**

ICS:

29.040.10	Izolacijska olja	Insulating oils

SIST EN IEC 60599:2022 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60599

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ICS 17.220.99; 29.040.10; 29.180

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English Version

Mineral oil-filled electrical equipment in service - Guidance on the interpretation of dissolved and free gases analysis (IEC 60599:2022)

Matériels électriques remplis d'huile minérale en service - Recommandations relatives à l'interprétation de l'analyse des gaz dissous et des gaz libres (IEC 60599:2022)

In Betrieb befindliche, mit Mineralöl befüllte elektrische Geräte - Leitfaden zur Interpretation der Analyse gelöster und freier Gase (IEC 60599:2022)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 10/1164/FDIS, future edition 4 of IEC 60599, prepared by IEC/TC 10 "Fluids for electrotechnical applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60599:2022.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2023-03-29
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2025-06-29

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60475	-	Method of sampling insulating liquids	-	-
IEC 60567	2011	Oil-filled electrical equipment - Sampling of gases and analysis of free and dissolved gases - Guidance	EN 60567	2011
IEC 61198	-	Mineral insulating oils - Methods for the determination of 2-furfural and related compounds	EN 61198	-

IEC 60599

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Mineral oil-filled electrical equipment in service – Guidance on the interpretation of dissolved and free gases analysis

Matériels électriques remplis d'huile minérale en service – Recommandations relatives à l'interprétation de l'analyse des gaz dissous et des gaz libres

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 17.220.99; 29.040.10; 29.180

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MINERAL OIL-FILLED ELECTRICAL EQUIPMENT IN SERVICE – GUIDANCE ON THE INTERPRETATION OF DISSOLVED AND FREE GASES ANALYSIS

FOREWORD

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IEC 60599 has been prepared by IEC technical committee 10: Fluids for electrotechnical applications. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) revision of Clause A.5 on bushings, at the request of IEC subcommittee 36A, in order to transfer to IEC 60599 the corresponding contents of IEC TR 61464 [1][1] relating to DGA in bushings and include the new information on DGA in bushings available in CIGRE Technical Brochure 771 (2019) [2];

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1 Numbers in square brackets refer to the Bibliography.

b) revision of Clause A.3 on wind turbine transformers, in order to include in IEC 60599 the new information on DGA in wind turbine transformers available in CIGRE Technical Brochure 771 (2019) [2].

The text of this International Standard is based on the following documents:

Draft	Report on voting
10/1164/FDIS	10/1174/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Dissolved and free gas analysis (DGA) is one of the most widely used diagnostic tools for detecting and evaluating faults in electrical equipment filled with insulating liquid. However, interpretation of DGA results is often complex and should always be done with care, involving experienced insulation maintenance personnel.

This document gives information for facilitating this interpretation. The first edition, published in 1978, has served the industry well, but had its limitations, such as the absence of a diagnosis in some cases, the absence of concentration levels and the fact that it was based mainly on experience gained from power transformers. The second edition (2015) attempted to address some of these shortcomings. Interpretation schemes were based on observations made after inspection of a large number of faulty oil-filled equipment in service and concentrations levels deduced from analyses collected worldwide.