INTERNATIONAL STANDARD IEC 60034-18-22

Second edition
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Rotating electrical machines –

Part 18-22: Functional evaluation of insulation systems – Test procedures for wire-wound windings – Classification of changes and insulation component substitutions

Machines électriques tournantes –

Partie 18-22: Evaluation fonctionnelle des systèmes d'isolation – Procédures d'essai pour enroulement à fils – Classification des modifications et des substitutions de composants d'isolations

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ROTATING ELECTRICAL MACHINES –

Part 18-22: Functional evaluation of insulation systems – Test procedures for wire-wound windings – Classification of changes and insulation component substitutions

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60034-18-22 has been prepared by subcommittee 2J: Classification of insulation systems for rotating machinery, of IEC technical committee 2: Rotating electrical machines.

This second edition cancels and replaces the first edition published in 1996 of which it constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
2/1088/FDIS	2/1096/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

It forms part of a series under the general title Rotating electrical machines:

Part 18-1:1992, Functional evaluation of insulation systems – General guidelines

Part 18-21:1992, Functional evaluation of insulation systems – Test procedures for wire-wound windings – Thermal evaluation and classification

Part 18-31:1992, Functional evaluation of insulation systems – Test procedures for form-wound windings – Thermal evaluation and classification of insulation systems used in machines up to and including 50 MVA and 15 kV

Part 18-32:1995, Functional evaluation of insulation systems – Test procedures for form-wound windings – Electrical evaluation of insulation systems used in machines up to and including 50 MVA and 15 kV

Part 18-33:1995, Functional evaluation of insulation systems – Test procedures for form-wound windings – Multifactor functional evaluation – Endurance under combined thermal and electrical stresses of insulation systems used in machines up to and including 50 MVA and 15 kV

INTRODUCTION

IEC 60034-18-1 presents general principles for evaluation and classification of insulation systems used in rotating electrical machines. Unless the procedures of this part indicate otherwise, the principles of IEC 60034-18-1 should be followed.

IEC 60034-18-21 deals with the thermal evaluation and classification of insulation systems for wire-wound windings in respect of normal procedures as referred to in 5.3.2.1 of IEC 60034-18-1.

This part of IEC 60034 is concerned with procedures of verification of the effects of changes in insulation systems for wire-wound windings covered by 5.3.2.2 of IEC 60034-18-1.

ROTATING ELECTRICAL MACHINES –

Part 18-22: Functional evaluation of insulation systems – Test procedures for wire-wound windings – Classification of changes and insulation component substitutions

1 Scope

This part of IEC 60034 gives test procedures for the thermal evaluation and classification of changes and insulation component substitution in insulation systems used or proposed for use in a proven insulation system used in wire-wound windings. The test procedures are comparative in that the performance of a candidate system is compared to that of a reference system which has previously been proved by experience or has been evaluated by one of the procedures given in 60034-18-21 and to which the change or substitution is intended.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60034-18-21:1992, *Rotating electric machines – Part 18: Functional evaluation of insulation systems – Section 21: Test procedures for wire-wound windings – Thermal evaluation and classification*

IEC 60172:1987, *Test procedure for the determination of the temperature index of enamelled winding wires*

IEC 60216, *Guide for the determination of thermal endurance properties of electrical insulating materials*

IEC 60317, *Specifications for particular types of winding wires*

IEC 61033:1991, *Test methods for the determination of bond strength of impregnating agents to an enamelled wire substrate*