SLOVENSKI STANDARD
SIST-TS CLC/TS 60034-31:2011

01-maj-2011

Električni rotacijski stroji - 31. del: Izbiranje energijsko učinkovitih motorjev vključno z motorji s spremenljivo hitrostjo - Navodilo za uporabo (IEC/TS 60034-31:2010)

Rotating electrical machines - Part 31: Selection of energy-efficient motors including variable speed applications - Application guide (IEC/TS 60034-31:2010)

Drehende elektrische Maschinen - Teil 31: Auswahl von Energiesparmotoren einschließlich Drehzahlstellantrieben - Anwendungsleitfaden (IEC/TS 60034-31:2010)

Machines électriques tournantes - Partie 31: Choix des moteurs éconergétiques incluant les applications à vitesse variable - Guide d'application (CEI/TS 60034-31:2010)

Ta slovenski standard je istoveten z: **CLC/TS 60034-31:2011**

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29.160.30 Motorji Motors

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CLC/TS 60034-31

February 2011

ICS 29.160

English version

Rotating electrical machines - Part 31: Selection of energy-efficient motors including variable speed applications - Application guide

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This Technical Specification was approved by CENELEC on 2011-02-21.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. CLC/TS 60034-31:2011 E

Foreword

The text of the Technical Specification IEC/TS 60034-31:2010, prepared by IEC TC 2, Rotating machinery, was submitted to the formal vote and was approved by CENELEC as CLC/TS 60034-31 on 2011-02-21.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following date was fixed:

– latest date by which the existence of the CLC/TS has to be announced at national level (doa) 2011-08-21

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the Technical Specification IEC/TS 60034-31:2010 was approved by CENELEC as a Technical Specification without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60034-2-1:2007	NOTE	Harmonized as EN 60034-2-1:2007 (not modified).
IEC 60034-12	NOTE	Harmonized as EN 60034-12.
IEC/TS 60034-17	NOTE	Harmonized as CLC/TS 60034-17.
IEC/TS 60034-25	NOTE	Harmonized as CLC/TS 60034-25.
IEC 60034-26	NOTE	Harmonized as EN 60034-26.
IEC 60079-0	NOTE	Harmonized as EN 60079-0.
IEC 60300-3-3	NOTE	Harmonized as EN 60300-3-3.
IEC 61241-1	NOTE	Harmonized as EN 61241-1.
IEC 61800-2	NOTE	Harmonized as EN 61800-2.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60034-1 (mod)	-	Rotating electrical machines - Part 1: Rating and performance	EN 60034-1	-
IEC 60034-30	-	Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)	EN 60034-30	-

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colour inside

Rotating electrical machines – Part 31: Selection of energy-efficient motors including variable speed applications – Application guide

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ROTATING ELECTRICAL MACHINES –

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FOREWORD

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 60034-31, which is a technical specification, has been prepared by IEC technical committee 2: Rotating machinery.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
2/1575/DTS	2/1594/RVC

Full information on the voting for the approval of this technical specification 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 2.

A list of all parts of the IEC 60034 series, published under the general title *Rotating electrical machines,* can be found on the IEC website.

NOTE A table of cross-references of all IEC TC 2 publications can be found in the IEC TC 2 dashboard on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The present technical specification gives technical guidelines for the application of energy-efficient motors in constant-speed and variable speed applications. It does not cover aspects of a purely commercial nature.

Standards developed by IEC technical committee 2 do not deal with methods of how to obtain a high efficiency but with tests to verify the guaranteed value. IEC 60034-2-1 is the most important standard for this purpose.

For approximately 15 years regional agreements were negotiated in many areas of the world regarding efficiency classes of three-phase, cage-induction motors with outputs up to about 200 kW maximum, as motors of this size are installed in high quantities and are for the most part produced in series production. The design of these motors is often driven by the market demand for low investment cost, hence energy efficiency was not a top priority.

In IEC 60034-30, IE efficiency classes for single-speed cage-induction motors have been defined and test procedures specified:

IE1	Standard efficiency
IE2	High efficiency
IE3	Premium efficiency
IE4	Super-premium efficiency

Determination of efficiency for motors powered by a frequency converter will be included in IEC standard 60034-2-3.

However, for motors rated 1 MW and above, which are usually custom made, a high efficiency has always been one of the most important design goals. The full-load efficiency of these machines typically ranges between 95 % and 98 %. Efficiency is usually part of the purchase contract and is penalized if the guaranteed values are not met. Therefore, these higher ratings are of secondary importance when assigning efficiency classes.

With permission from the National Electrical Manufacturers Association (NEMA), some parts of this TS are based on NEMA MG 10, *Energy Management Guide For Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Induction Motors*.