SLOVENSKI STANDARD
SIST EN 60034-30:2009

01-maj-2009

Električni rotacijski stroji - 30. del: Razredi izkoristka pri enohitrostnih trifaznih motorjih z indukcijsko kletko (koda IE) (IEC 60034-30:2008)

Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code) (IEC 60034-30:2008)

Drehende elektrische Maschinen - Teil 30: Wirkungsgrad-Klassifizierung von Drehstrommotoren mit Käfigläufern, ausgenommen polumschaltbare Motoren (IE-Code) (IEC 60034-30:2008)

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Machines électriques tournantes - Partie 30: Classes de rendement pour les moteurs à induction triphasés à cage, mono vitesse (Code IE) (CEI 60034-30:2008)

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Ta slovenski standard je istoveten z: **EN 60034-30:2009**

ICS:

29.160.30 Motorji Motors

SIST EN 60034-30:2009 **en,fr**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60034-30

March 2009

ICS 29.160

English version

Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE-code)

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This European Standard was approved by CENELEC on 2009-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of document 2/1518/FDIS, future edition 1 of IEC 60034-30, prepared by IEC TC 2, Rotating machinery, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60034-30 on 2009-03-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60034-30:2008 was approved by CENELEC as a European Standard without any modification.

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

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IEC 60034-5	NOTE	Harmonized as EN 60034-5:2001 (not modified).
IEC 60034-12	NOTE	Harmonized as EN 60034-12:2002 (not modified).
IEC/TS 60034-17	NOTE	Harmonized as CLC/TS 60034-17:2004 (not modified).
IEC/TS 60034-25	NOTE	Harmonized as CLC/TS 60034-25:2008 (not modified).
IEC 60079-0	NOTE	Harmonized as EN 60079-0:2006 (modified).

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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	-[1)]	Rotating electrical machines - Part 1: Rating and performance	EN 60034-1	2004[2)]
IEC 60034-2-1	-[1)]	Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	EN 60034-2-1	2007[2)]
IEC 60034-6	-[1)]	Rotating electrical machines - Part 6: Methods of cooling (IC Code)	EN 60034-6	1993[2)]
IEC 60072-1	-[1)]	Dimensions and output series for rotating electrical machines - Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1 080	-	-

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[1)] Undated reference.

[2)] Valid edition at date of issue.

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IEC 60034-30

Edition 1.0 2008-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Rotating electrical machines –
Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE-code)

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Machines électriques tournantes –
Partie 30: Classes de rendement pour les moteurs à induction triphasés à cage, mono vitesse (Code IE)

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
CODE PRIX Q

ICS 29.160

ISBN 2-8318-1013-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ROTATING ELECTRICAL MACHINES –

Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE-code)

FOREWORD

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International Standard IEC 60034-30 has been prepared by IEC technical committee 2: Rotating machinery.

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

FDIS	Report on voting
2/1518/FDIS	2/1521/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 2.

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

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

This International Standard provides for the global harmonization of energy-efficiency classes for electric motors.

Electric motor applications in industry consume between 30 % and 40 % of the generated electrical energy worldwide. Improving efficiency of the complete drive system (i.e. motor and adjustable-speed drives) including the application (or process) is therefore a major concern in energy-efficiency efforts. The total energy saving potential of an optimized system is assumed to be around 30 % to 60 %.

According to the findings of the IEA 7 July 2006 Motor Workshop, electric motors with improved efficiency in combination with frequency converters can save about 7 % of the total worldwide electrical energy. Roughly one quarter to one third of these savings come from the improved efficiency of the motor. The remaining part results from system improvements.

Many different energy efficiency standards for cage induction motors are already in use (NEMA, EPACT, CSA, CEMEP, COPANT, AS/NZS, JIS, GB and others) with new classes currently being developed. It becomes increasingly difficult for manufacturers to design motors for a global market and for customers to understand differences and similarities of standards in different countries.

Motors from 0,75 kW up to 375 kW make up the vast majority of installed motor population and are covered by this standard as shown in Figure 1.

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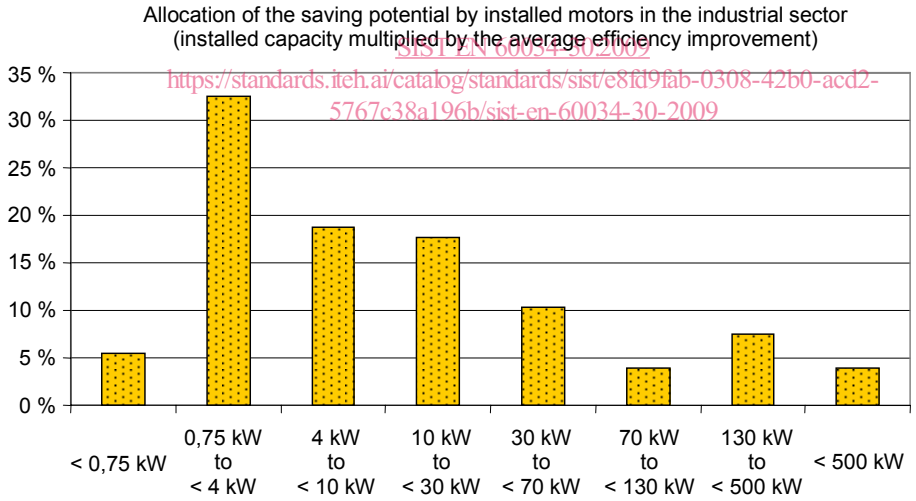

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Sources: 1. SAVE-Report "Improving the Penetration of Energy Efficient Motors and Drives" (1996)
2. CEMEP calculations

IEC 1823/08

Figure 1 – Allocation of the saving potential by installed motors in the industrial sector

In some countries smaller motors are included in energy efficiency regulations. Most of these motors are not three-phase, cage-induction machines. Also they typically do not run continuously so their energy saving potential is rather limited.

In some countries 8-pole motors are included in energy efficiency regulations. However, their market share is already very low (1 % or less). Due to increasing acceptance of variable-speed drives and the low cost associated with 4- and 6-pole standard motors it is expected that 8-pole motors will even further disappear from the general market in the future. Therefore, this standard does not include provisions for 8-pole motors.