

**SLOVENSKI STANDARD  
SIST EN 60034-14:2004****01-september-2004****BUXca Yý U  
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Rotating electrical machines - Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher - Measurement, evaluation and limits of vibration severity (IEC 60034-14:2003)

**ITEH STANDARD PREVIEW**  
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Drehende elektrische Maschinen - Teil 14: Mechanische Schwingungen von bestimmten Maschinen mit einer Achshöhe von 56 mm und höher - Messung, Bewertung und Grenzwerte der Schwingstärke (IEC 60034-14:2003)

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Machines électriques tournantes - Partie 14: Vibrations mécaniques de certaines machines de hauteur d'axe supérieure ou égale à 56 mm - Mesurage, évaluation et limites de l'intensité vibratoire (CEI 60034-14:2003)

**Ta slovenski standard je istoveten z: EN 60034-14:2004****ICS:**

17.160	Vibracije, meritve udarcev in vibracij	Vibrations, shock and vibration measurements
29.160.01	Rotacijski stroji na splošno	Rotating machinery in general

**SIST EN 60034-14:2004****en**

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English version

**Rotating electrical machines**  
**Part 14: Mechanical vibration of certain machines**  
**with shaft heights 56 mm and higher –**  
**Measurement, evaluation and limits of vibration severity**  
**(IEC 60034-14:2003)**

Machines électriques tournantes  
Partie 14: Vibrations mécaniques  
de certaines machines de hauteur d'axe  
supérieure ou égale à 56 mm –  
Mesurage, évaluation et limites  
de l'intensité vibratoire  
(CEI 60034-14:2003)

Drehende elektrische Maschinen  
Teil 14: Mechanische Schwingungen von  
bestimmten Maschinen mit  
einer Achshöhe von 56 mm und höher –  
Messung, Bewertung und Grenzwerte  
der Schwingstärke  
(IEC 60034-14:2003)

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[https://standards.iteh.ai/catalog/standards/sist/3424646f-852d-4907-acc7-](https://standards.iteh.ai/catalog/standards/sist/3424646f-852d-4907-acc7-389164769481/sist-60034-14-2004)

This European Standard was approved by CENELEC on 2003-12-01. 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.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 2/1257/FDIS, future edition 3 of IEC 60034-14, prepared by IEC TC 2, Rotating machinery, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60034-14 on 2003-12-01.

This European Standard supersedes EN 60034-14:1996.

The significant technical changes with respect to the previous edition are:

- a) reduced vibration levels of new machines during factory acceptance tests; the new levels are based on a combination of displacement, velocity and acceleration rather than only velocity;
- b) the speed range is extended;
- c) the number of shaft-height ranges is reduced;
- d) a procedure for testing vertical motors has been introduced.

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) 2004-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-12-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 60034-14:2003 was approved by CENELEC as a European Standard without any modification.

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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-1 (mod)	- <sup>1)</sup>	Rotating electrical machines Part 1: Rating and performance	EN 60034-1	1998 <sup>2)</sup>
IEC 60034-7	- <sup>1)</sup>	Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)	EN 60034-7	1993 <sup>2)</sup>
ISO 2954	- <sup>1)</sup>	Mechanical vibration of rotating and reciprocating machinery - Requirements for instruments for measuring vibration severity	-	-
ISO 7919-1	- <sup>1)</sup>	Mechanical vibration of non- reciprocating machines - Measurements on rotating shafts and evaluation criteria Part 1: General guidelines	-	-
ISO 8821	- <sup>1)</sup>	Mechanical vibration - Balancing - Shaft and fitment key convention	-	-
ISO 10817-1	- <sup>1)</sup>	Rotating shaft vibration measuring systems Part 1: Relative and absolute sensing of radial vibration	-	-

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1) Undated reference.

2) Valid edition at date of issue.

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INTERNATIONAL  
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**CEI  
IEC**

**60034-14**

Troisième édition  
Third edition  
2003-11

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**Machines électriques tournantes –**

**Partie 14:**

**Vibrations mécaniques de certaines machines  
de hauteur d'axe supérieure ou égale à 56 mm –  
Mesurage, évaluation et limites de l'intensité  
vibratoire**

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**Rotating electrical machines –**

**Part 14:**

**Mechanical vibration of certain machines  
with shaft heights 56 mm and higher –  
Measurement, evaluation and limits  
of vibration severity**

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International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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For price, see current catalogue*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ROTATING ELECTRICAL MACHINES –

**Part 14: Mechanical vibration of certain machines  
with shaft heights 56 mm and higher –  
Measurement, evaluation and limits of vibration severity**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. 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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International Standard IEC 60034-14 has been prepared by IEC technical committee 2: Rotating machinery.

This third edition cancels and replaces the second edition published in 1996. The significant technical changes with respect to the previous edition are:

- a) reduced vibration levels of new machines during factory acceptance tests; the new levels are based on a combination of displacement, velocity and acceleration rather than only velocity;
- b) the number of shaft-height ranges is reduced;
- c) procedures for testing vertical motors have been reduced.

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

FDIS	Report on voting
2/1257/FDIS	2/1273/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.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

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## ROTATING ELECTRICAL MACHINES –

### Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibration severity

#### 1 Scope

This part of IEC 60034 specifies the factory acceptance vibration test procedures and vibration limits for certain electrical machines under specified conditions, when uncoupled from any load or prime mover.

It is applicable to d.c. and three-phase a.c. machines, with shaft heights 56 mm and higher and a rated output up to 50 MW, at operational speeds from 120 min<sup>-1</sup> up to and including 15 000 min<sup>-1</sup>.

This standard is not applicable to machines mounted *in situ*, three-phase commutator motors, single-phase machines, three-phase machines operated on single-phase systems, vertical waterpower generators, turbine generators greater than 20 MW and machines with magnetic bearings or series-wound machines.

NOTE For machines measured *in situ* refer to applicable parts of ISO 10816 and ISO 7919.

#### 2 Normative references

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.

IEC 60034-1, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60034-7, *Rotating electrical machines – Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)*

ISO 2954, *Mechanical vibration of rotating and reciprocating machinery – Requirements for instruments for measuring vibration severity*

ISO 7919-1, *Mechanical vibration of non-reciprocating machines – Measurements on rotating shafts and evaluation criteria – Part 1: General guidelines*

ISO 8821, *Mechanical vibration – Balancing – Shaft and fitment key convention*

ISO 10817-1, *Rotating shaft vibration measuring systems – Part 1: Relative and absolute sensing of radial vibration from rotating shafts*