



**SLOVENSKI STANDARD**  
**SIST-TS CLC/TS 60034-26:2005**  
**01-junij-2005**

FcHUW'g\_J'YY\_f] b]g'f'c'j'Ë'&\* "XY.'Jd`j] j'Ug]a Yf] bY'bUdY'c'g'h]bUXY'c] bY  
`Ug]b'c'g'h]f]j]Z'h]b] ]bXi \_W'g\_] \ 'a c'f'c'f'j' f'97 #HG\* \$\$' (!&\* .&\$\$&Z'7 cff][ YbXi a  
&\$\$&L

Rotating electrical machines -- Part 26: Effects of unbalanced voltages on the performance of three-phase induction motors

Drehende elektrische Maschinen -- Teil 26: Einfluss eines unsymmetrischen Spannungssystems auf den Betrieb von Drehstrom-Induktionsmotoren mit Käfigläufer  
(standards.iteh.ai)

Machines électriques tournantes -- Partie 26: Effets d'un système de tensions déséquilibrées sur les caractéristiques de fonctionnement des moteurs asynchrones triphasés  
104e309360a2/sist-ts-clc-ts-60034-26-2005

**Ta slovenski standard je istoveten z: CLC/TS 60034-26:2004**

**ICS:**

29.160.30      Motorji      Motors

**SIST-TS CLC/TS 60034-26:2005      en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

TECHNICAL SPECIFICATION

**CLC/TS 60034-26**

SPECIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

September 2004

ICS 29.160.01

English version

**Rotating electrical machines**  
**Part 26: Effects of unbalanced voltages on the performance**  
**of three-phase induction motors**  
(IEC/TS 60034-26:2002 + corrigendum 2002)

Machines électriques tournantes  
Partie 26: Effets d'un système de tensions  
déséquilibrées sur les caractéristiques  
de fonctionnement des moteurs  
asynchrones triphasés  
(CEI/TS 60034-26:2002  
+ corrigendum 2002)

Drehende elektrische Maschinen  
Teil 26: Einfluss eines unsymmetrischen  
Spannungssystems auf den Betrieb  
von Drehstrom-Induktionsmotoren  
mit Käfigläufer  
(IEC/TS 60034-26:2002  
+ Corrigendum 2002)

Iteh STANDARD PREVIEW  
(standards.iteh.ai)

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

This Technical Specification was approved by CENELEC on 2004-07-03.

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.

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 the Technical Specification IEC/TS 60034-26:2002 + corrigendum November 2002, prepared by IEC TC 2, Rotating machinery, was submitted to the formal vote and was approved by CENELEC as CLC/TS 60034-26 on 2004-07-03 without any modification.

The following date was fixed:

- latest date by which the existence of the CLC/TS  
has to be announced at national level (doa) 2005-01-03

Annex ZA has been added by CENELEC.

---

### Endorsement notice

The text of the Technical Specification IEC/TS 60034-26:2002 + corrigendum November 2002 was approved by CENELEC as a Technical Specification without any modification.

---

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

**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 Where 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 60034-12	- <sup>1)</sup>	Rotating electrical machines Part 12: Starting performance of single- speed three-phase cage induction motors	EN 60034-12	2002 <sup>2)</sup>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

---

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

SPÉCIFICATION  
TECHNIQUE  
TECHNICAL  
SPECIFICATION

CEI  
IEC

TS 60034-26

Première édition  
First edition  
2002-05

**Machines électriques tournantes –**

**Partie 26:**

**Effets d'un système de tensions déséquilibrées  
sur les caractéristiques de fonctionnement des  
moteurs asynchrones triphasés**

ITEH STANDARD PREVIEW

(standards.iteh.ai)

**Rotating electrical machines –**

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>

**Part 26:**

**Effects of unbalanced voltages on the performance  
of three-phase induction motors**

© IEC 2002 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

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

CODE PRIX  
PRICE CODE

H

Pour prix, voir catalogue en vigueur  
For price, see current catalogue

## CONTENTS

FOREWORD.....	5
INTRODUCTION.....	9
1 Scope.....	11
2 Normative references .....	11
3 Effects of unbalanced voltages on performance.....	11
3.1 Currents .....	11
3.2 Torques.....	11
3.3 Full-load speed.....	11
4 Derating of motor to prevent overheating.....	13
Annex A (informative) Worked example .....	15
Figure 1 – Typical values of derating of design N, three-phase cage induction motors within the scope of IEC 60034-12.....	13
Figure A.1 – Phasor diagram .....	15

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CLC/TS 60034-26:2005](https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005)

<https://standards.iteh.ai/catalog/standards/sist/b4d3d887-a314-41ea-8fb0-104e309360a2/sist-ts-clc-ts-60034-26-2005>



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ROTATING ELECTRICAL MACHINES –

**Part 26: Effects of unbalanced voltages on the performance  
of three-phase induction motors**

## 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.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this technical specification may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical specification when

- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- 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 60034-26, which is a technical specification, has been prepared IEC technical committee 2: Rotating machinery.

This Technical Specification cancels and replaces the Technical Report IEC 60892 published in 1987.