



**SLOVENSKI STANDARD**  
**SIST EN 61000-4-34:2007/A1:2009**  
**01-november-2009**

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Electromagnetic compatibility (EMC) -- Part 4-34: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase

**iTeh STANDARD PREVIEW**

Elektromagnetische Verträglichkeit (EMV) -- Teil 4-34: Prüf- und Messverfahren - Prüfungen der Störfestigkeit von Geräten und Einrichtungen mit einem Eingangsstrom > 16 A je Leiter gegen Spannungseinbrüche, Kurzzeitunterbrechungen und Spannungsschwankungen  
<http://standards.iteh.ai/catalog/standards/sist/ecca430e-c225-42f2-9410-b6da204ab1a3/sist-en-61000-4-34-2007-a1-2009>

Compatibilité électromagnétique (CEM) -- Partie 4-34: Techniques d'essai et de mesure - Essais d'immunité aux creux de tension, coupures brèves et variations de tension pour matériel ayant un courant appelé de plus de 16 A par phase

**Ta slovenski standard je istoveten z: EN 61000-4-34:2007/A1:2009**

**ICS:**

33.100.20      Imunost      Immunity

**SIST EN 61000-4-34:2007/A1:2009**      en,fr

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61000-4-34/A1**

August 2009

ICS 33.100.20

English version

**Electromagnetic compatibility (EMC) -  
Part 4-34: Testing and measurement techniques -  
Voltage dips, short interruptions and voltage variations immunity tests  
for equipment with mains current more than 16 A per phase  
(IEC 61000-4-34:2005/A1:2009)**

Compatibilité électromagnétique (CEM) -  
Partie 4-34: Techniques d'essai  
et de mesure -  
Essais d'immunité aux creux de tension,  
coupures brèves et variations de tension  
pour matériel ayant un courant  
d'alimentation de plus de 16 A par phase  
(CEI 61000-4-34:2005/A1:2009)

Elektromagnetische  
Verträglichkeit (EMV) -  
Teil 4-34: Prüf- und Messverfahren -  
Prüfungen der Störfestigkeit  
von Geräten und Einrichtungen  
mit einem Netzstrom > 16 A je Leiter  
gegen Spannungseinbrüche,  
Kurzzeitunterbrechungen  
und Spannungsschwankungen  
(IEC 61000-4-34:2005/A1:2009)

<https://standards.iteh.ai/catalog/standards/sist/ecca430e-c225-42f2-9410-b6da204ab1a3/sist-en-61000-4-34-2007-a1-2009>

This amendment A1 modifies the European Standard EN 61000-4-34:2007; it was approved by CENELEC on 2009-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 77A/670/CDV, future amendment 1 to IEC 61000-4-34:2005, prepared by SC 77A, Low frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 61000-4-34:2007 on 2009-07-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2010-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2012-07-01

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## Endorsement notice

The text of amendment 1:2009 to the International Standard IEC 61000-4-34:2005 was approved by CENELEC as an amendment to the European Standard without any modification.

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IEC 61000-4-34

Edition 1.0 2009-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

BASIC EMC PUBLICATION  
PUBLICATION FONDAMENTALE EN CEM

AMENDMENT 1  
AMENDEMENT 1

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

**Electromagnetic compatibility (EMC) –  
Part 4-34: Testing and measurement techniques – Voltage dips, short  
interruptions and voltage variations immunity tests for equipment with mains  
current more than 16 A per phase**

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tension, coupures brèves et variations de tension pour matériel ayant un  
courant d'alimentation de plus de 16 A par phase**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
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ICS 33.100.20

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## FOREWORD

This amendment has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

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

Enquiry draft	Report on voting
77A/670/CDV	77A/688/RVC

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

The committee has decided that the contents of this amendment and the base 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
- amended.

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### Main title

[SIST EN 61000-4-34:2007/A1:2009](https://standards.iteh.ai/catalog/standards/sist/ecca430e-c225-42f2-9410-b6da204ab1a5/sist-en-61000-4-34-2007-a1-2009)

*Replace the part title on the cover page, the title page, above the Foreword and the Scope by the following:*

### **Part 4-34: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16 A per phase**

#### 1 Scope

*Replace the entire second paragraph of the scope by the following:*

This standard applies to electrical and electronic equipment having a rated mains current exceeding 16 A per phase. (See Annex E for guidance on electrical and electronic equipment rated at more than 200 A per phase.) It covers equipment installed in residential areas as well as industrial machinery, specifically voltage dips and short interruptions for equipment connected to either 50 Hz or 60 Hz a.c. networks, including 1-phase and 3-phase mains.

NOTE 1 Equipment with a rated mains current of 16 A or less per phase is covered by publication IEC 61000-4-11.

NOTE 2 There is no upper limit on rated mains current in this publication. However, in some countries, the rated mains current may be limited to some upper value, for example 75 A or 250 A, because of mandatory safety standards.

#### 3.6 rated input voltage

*Delete this term and definition and renumber the following terms and definitions accordingly.*

## 5 Test levels

Modify the first sentence as follows:

The voltages in this standard use the rated voltage for the equipment as a basis for voltage test level specification ( $U_T$ ).

### 5.1 Voltage dips and short interruptions

Delete the last two paragraphs before Table 1, beginning with “Shorter durations in the table...”, and ending with “...after the voltage dip.”

**Table 1 – Preferred test level and durations for voltage dips**

Replace the existing Table 1 by the following new Table 1:

Classes <sup>a</sup>	Test level and durations for voltage dips ( $t_s$ ) (50 Hz/60 Hz)			
Class 1	Case-by-case according to the equipment requirements			
Class 2	0 % during 1 cycle	70 % during 25/30 <sup>c</sup> cycles		
Class 3	0 % during 1 cycle	40 % <sup>d</sup> during 10/12 <sup>c</sup> cycles	70 % during 25/30 <sup>c</sup> cycles	80 % during 250/300 <sup>c</sup> cycles
Class X <sup>b</sup>	X	X	X	X

<sup>a</sup> Classes as per IEC 61000-2-4; see Annex B

<sup>b</sup> To be defined by product committee. For equipment connected directly or indirectly to public network, the levels must not be less severe than class 2

<sup>c</sup> "25/30 cycles" means "25 cycles for 50 Hz test" and "30 cycles for 60 Hz test", "10/12 cycles" means "10 cycles for 50 Hz test" and "12 cycles for 60 Hz test", and "250/300 cycles" means "250 cycles for 50 Hz test" and "300 cycles for 60 Hz test".

<sup>d</sup> May be replaced by product committee with a test level of 50 % for equipment that is intended primarily for 200 V or 208 V nominal operation.

### 5.2 Voltage variations (optional)

Add the following paragraph immediately below Table 3:

For voltage variations in three-phase systems with or without neutral, all the three phases shall be tested simultaneously. Simultaneous voltage variations in three-phase systems are positioned at the zero-crossing of one of the voltages.

**Table 4 – Generator specifications**

Replace the existing Table 4 by the following new Table 4:

Output voltage at no load	As required in Table 1, $\pm 5\%$ of residual voltage value
Voltage at the output of the generator during equipment test	As required in Table 1, $\pm 10\%$ of residual voltage value, measured as r.m.s. value refreshed each $\frac{1}{2}$ cycle per IEC 61000-4-30
Output current capability	See Annex A
Peak inrush current capability (no requirement for voltage variation tests)	See Annex A
Instantaneous peak overshoot/undershoot of the actual voltage, generator loaded with resistive load – see NOTE 1	Less than $5\%$ of $U_T$
Voltage rise (and fall) time $t_r$ (and $t_f$ ), during abrupt change, generator loaded with resistive load – see NOTE A and NOTE 1	Between $1\ \mu\text{s}$ and $5\ \mu\text{s}$ for current $\leq 75\ \text{A}$ Between $1\ \mu\text{s}$ and $50\ \mu\text{s}$ for current $> 75\ \text{A}$
Phase angle at which the voltage dip begins and ends	$0^\circ$ to $360^\circ$ with a maximum resolution of $5^\circ$ , see NOTE B
Phase relationship of voltage dips and interruptions with the power frequency	Less than $\pm 5^\circ$
Zero crossing control of the generators	$\pm 10^\circ$
NOTE A These values must be checked with a resistive load as per NOTE 1 after this table, but they need not be checked when an EUT is connected.	
NOTE B Phase angle adjustment may be required to comply with 5.1.	

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### 6.1.1 Characteristics and performance of the generator

Replace the last sentence before NOTE 1 by the following:

For generating interruptions, a high impedance open circuit is permitted.

### 8.2.1 Voltage dips and short interruptions

Delete, in the second paragraph, “except for  $\frac{1}{2}$  cycle test which shall occur at  $90^\circ$ ”

Delete the entire NOTE after the second paragraph.

Replace the last sentence of the sixth paragraph by the following:

See Figure 3a, Figure 3b and Figure 3c.

Replace the last sentence of the seventh paragraph by the following:

See Figure 3b and Figure 3c.

## Annex A – Test generator peak inrush current drive capability

Replace the title of Annex A as follows:



