

**SLOVENSKI STANDARD**  
**SIST EN 60439-1:2000/A1:2004**  
**01-junij-2004**

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**Sestavi nizkonapetostnih stikalnih in krmilnih naprav - 1. del: Tipsko preskušeni in delno tipsko preskušeni sestavi (IEC 60439-1:1999/A1:2004)**

Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999/A1:2004)

Niederspannungs-Schaltgerätekombinationen - Teil 1: Typgeprüfte und partiell typgeprüfte Kombinationen (IEC 60439-1:1999/A1:2004)

Ensembles d'appareillage à basse tension - Partie 1: Ensembles de série et ensembles dérivés de série (CEI 60439-1:1999/A1:2004)

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**Ta slovenski standard je istoveten z: EN 60439-1:1999/A1:2004**

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**ICS:**

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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**SIST EN 60439-1:2000/A1:2004**                      **en**

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EUROPEAN STANDARD

**EN 60439-1/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2004

ICS 29.130.20

English version

**Low-voltage switchgear and controlgear assemblies**  
**Part 1: Type-tested and partially type-tested assemblies**  
(IEC 60439-1:1999/A1:2004)

Ensembles d'appareillage à basse tension  
Partie 1: Ensembles de série  
et ensembles dérivés de série  
(CEI 60439-1:1999/A1:2004)

Niederspannung-  
Schaltgerätekombinationen  
Teil 1: Typgeprüfte und partiell typgeprüfte  
Kombinationen  
(IEC 60439-1:1999/A1:2004)

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This amendment A1 modifies the European Standard EN 60439-1:1999; it was approved by CENELEC on 2004-03-16. CENELEC members are bound to comply with the 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, 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 17D/294/FDIS, future amendment 1 to IEC 60439-1:1999, prepared by SC 17D, Low-voltage switchgear and controlgear assemblies, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60439-1:1999 on 2004-03-16.

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) 2005-01-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2007-04-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of amendment 1:2004 to the International Standard IEC 60439-1:1999 was approved by CENELEC as an amendment to the European Standard without any modification.

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[SIST EN 60439-1:2000/A1:2004](https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004)

<https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004>

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

**Delete:**

- IEC 60050 (826): 1982
- IEC 60750:1983
- IEC 61000-4-3:1993
- CISPR 11:1990

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
<b>Add:</b>				
IEC 60204-1	1997	Safety of machinery - Electrical equipment of machines Part 1: General requirements	EN 60204-1 + corr. September 1998	1997 1998
IEC 60695-2-10	2000	Fire hazard testing Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001
IEC 60695-2-11	2000	Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 61000-3-2 (mod)	2000	Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2	2000
IEC 61000-4-3	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002
IEC 61000-4-6	2003	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	-	-
IEC 61000-4-8	1993	Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	1993
IEC 61000-4-11	1994	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994

EN 60439-1:1999/A1:2004

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
<b>Add:</b>				
IEC 61000-4-13	2002	Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	EN 61000-4-13	2002
IEC 61000-6-3 (mod)	1996	Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	EN 61000-6-3	2001
IEC 61000-6-4 (mod)	1997	Part 6-4: Generic standards - Emission standard for industrial environments	EN 61000-6-4	2001
IEC 61082	series	Preparation of documents used in electrotechnology	EN 61082	series
IEC 61346-1	1996	Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations Part 1: Basic rules	EN 61346-1	1996
CISPR 11 (mod)	1997	Industrial, scientific and medical (ISM) radio frequency equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55011	1998
A1	1999	<a href="https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004">https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004</a>	A1	1999

NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC

60439-1

1999

AMENDEMENT 1  
AMENDMENT 1  
2004-01

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Amendement 1

**Ensembles d'appareillage à basse tension –**

**Partie 1:**

**Ensembles de série et ensembles dérivés de série**

(standards.iteh.ai)

Amendment 1

SIST EN 60439-1:2000/A1:2004

<https://standards.iteh.ai/catalog/standards/sist/en-60439-1-2000-a1-2004>  
**Low-voltage switchgear and controlgear assemblies –**

**Part 1:**

**Type-tested and partially type-tested assemblies**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

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

## FOREWORD

This amendment has been prepared by subcommittee 17D: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

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

FDIS	Report on voting
17D/294/FDIS	17D/296/RVD

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 the base publication and its amendments will remain unchanged until 2006. At this date, the publication will be

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

The contents of the corrigendum of November 2004 have been included in this copy.

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[SIST EN 60439-1:2000/A1:2004  
https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004](https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004)

*Add the title of Annex H as follows:*

Annex H (normative) Electromagnetic compatibility (EMC)



Page 13

## 1.1 Scope and object

*Delete the following text from the fifth paragraph:*

“for machine tools”.

*This second correction applies to the French text only.*

*Add, after the fifth paragraph, the following new paragraph:*

This standard applies also to ASSEMBLIES designed for electrical equipment of machines. However, where applicable the additional requirements of IEC 60204-1 have to be fulfilled.

## 1.2 Normative references

*Delete from the existing list the following standards:*

IEC 60050(826):1982

IEC 60750:1983

IEC 61000-4-3:1995

CISPR 11:1990

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[SIST EN 60439-1:2000/A1:2004](https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d1000cd7128/sist-en-60439-1-2000-a1-2004)

*Add to the existing list the titles of the following standards:*

IEC 60204-1:1997, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60695-2-10:2000, *Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products*

IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤16 A per phase)*

IEC 61000-4-3:2002, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-6:2003, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8:1993, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000-4-11:1994, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variation immunity tests*

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low-frequency immunity tests*

IEC 61000-6-3:1996, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

IEC 61000-6-4:1997, *Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments*

IEC 61082 (all parts), *Preparation of documents used in electrotechnology*

IEC 61346-1:1996, *Industrial systems, installation and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement Amendment 1 (1999)*

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#### **2.1.4 busbar**

*This correction applies to the French text only.*

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#### **2.1.9 test situation**

<https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004>

*Replace the existing definition 2.1.9 by the following new definition:*

condition of an ASSEMBLY or part of it in which the relevant main circuits are open on its supply side but not necessarily isolated whilst the associated auxiliary circuits are connected, allowing tests of the operation of incorporated devices

#### **2.1.10 disconnected situation**

*Replace the existing title and text of definition 2.1.10 as follows:*

#### **2.1.10 isolated situation**

condition of an ASSEMBLY or part of it in which the relevant main circuits are isolated on their supply side and the associated auxiliary circuits are also isolated

Pages 23, 25 and 27

*Remove all annex C figure references attached to definitions.*

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### **2.2.7 withdrawable part**

*Replace the existing definition 2.2.7 by the following new definition:*

removable part which can be moved from the connected position to the isolated position and to a test position, if any, whilst remaining mechanically attached to the ASSEMBLY

*Delete the NOTE.*

### **2.2.9 test position**

*Replace, in the text of this definition, the phrase “but not necessarily disconnected (isolated)” by “but not necessarily isolated”.*

### **2.2.10 disconnected position (isolated position)**

*Replace the existing term and text of definition 2.2.10 as follows:*

#### **2.2.10 isolated position**

position of a withdrawable part in which an isolating distance (see 7.1.2.2) is established in main and auxiliary circuits on its supply side, the withdrawable part remaining mechanically attached to the ASSEMBLY

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[SIST EN 60439-1:2000/A1:2004  
https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004](https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10600ed7128/sist-en-60439-1-2000-a1-2004)

### **2.2.12.3 withdrawable connection**

*Replace the existing definition 2.2.12.3 by the following new definition:*

connection which is connected or disconnected by bringing the functional unit into the connected or isolated situation

### **2.3.2 dead-front ASSEMBLY**

*Delete the words "of at least IP 2X".*

### **2.3.3 enclosed ASSEMBLY**

*Delete the words: "of at least IP 2X".*

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### **2.4.5 enclosure**

*Replace the existing definition 2.4.5 by the following new definition:*

housing affording the type and degree of protection suitable for the intended application

[IEV 195-02-35]

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#### **2.4.11 barrier**

*Replace the existing term and definition 2.4.11 by the following:*

#### **2.4.11**

##### **(electrically) protective barrier**

part providing protection against direct contact from any usual direction of access

[IEV 195-06-15]

#### **2.4.12 obstacle**

*Replace the existing term and definition 2.4.12 by the following:*

#### **2.4.12**

##### **(electrically) protective obstacle**

part preventing unintentional direct contact, but not preventing direct contact by deliberate action

[IEV 195-06-16]

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#### **2.4.17 insertion interlock**

*Replace the words "fixed part" by "location"*

[SIST EN 60439-1:2000/A1:2004](https://standards.iteh.ai/catalog/standards/sist/c2efbb7f-1385-4cb9-95ea-d10800ed7128/sist-en-60439-1-2000-a1-2004)

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#### **2.6.3 protective conductor (PE)**

*Replace the existing term and definition 2.6.3 by the following:*

#### **2.6.3**

##### **protective conductor**

(identification: PE)

conductor provided for purposes of safety, for example protection against electric shock

[IEV 195-02-09]

NOTE As an example, the protective conductor can electrically connect the following parts:

- exposed conductive parts;
- extraneous conductive parts;
- main earthing terminal;
- earth electrode;
- earthed point of the source or artificial neutral.

#### **2.6.4 neutral conductor (N)**

*Replace the existing term and definition 2.6.4 by the following:*