SLOVENSKI STANDARD
SIST EN 60974-10:2003

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Nadomešča:
SIST EN 50199:1998

Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements

Arc welding equipment -- Part 10: Electromagnetic compatibility (EMC) requirements

Lichtbogenschweißeinrichtungen -- Teil 10: Elektromagnetische Verträglichkeit (EMV) Anforderungen

Matériel de soudage à l'arc -- Partie 10: Exigences relatives à la compatibilité électromagnétique (CEM)

Ta slovenski standard je istoveten z: EN 60974-10:2003

ICS:

25.160.30	Varilna oprema	Welding equipment
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

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EUROPEAN STANDARD **EN 60974-10**

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ICS 25.160.30 Supersedes EN 50199:1995

English version

Arc welding equipment
Part 10: Electromagnetic compatibility (EMC) requirements
(IEC 60974-10:2002, modified)

Matériel de soudage à l'arc
Partie 10: Exigences relatives
à la compatibilité électromagnétique
(CEM)
(CEI 60974-10:2002, modifiée)

Lichtbogenschweißeinrichtungen
Teil 10: Elektromagnetische
Verträglichkeit (EMV) Anforderungen
(IEC 60974-10:2002, modifiziert)

This European Standard was approved by CENELEC on 2003-03-18. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

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Foreword

The text of document 26/237/FDIS, future edition 1 of IEC 60974-10, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60974-10 on 2003-03-18.

A draft amendment, prepared by the Technical Committee CENELEC TC 26A, Electric arc welding equipment, was submitted to the formal vote and was approved by CENELEC for inclusion into EN 60974-10 on 2003-03-18.

This European Standard supersedes EN 50199:1995 + corrigendum January 1998.

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) 2004-03-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-03-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60974-10:2002 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

6.2.2 Mains terminal disturbance voltage limits

Delete under “a)…” the wording “and IEC/TS 61000-3-4”.

Replace the note by the following:

NOTE IEC/TS 61000-3-4 may be used for guidance by the parties concerned with the installation of arc welding equipment in a low voltage network.

7.4 Immunity levels

Table 1, row 2, column 3, **replace** the given number “3” by the number “10”, so it will be read as 10 V/m.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60050-161	- [1]	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-851	- [1]	Chapter 851: Electric welding	-	-
IEC 60974-1	- [1]	Arc welding equipment Part 1: Welding power sources	EN 60974-1	1998 [2]
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 [2]
IEC 61000-3-3	1994	Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3 + corr. July	1995 1997
A1	2001		A1	2001
IEC/TS 61000-3-4	- [1]	Electromagnetic compatibility (EMC) Part 3-4: Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A	-	-

[1] Undated reference.

[2] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEC 61000-3-11	- [1)]	Electromagnetic compatibility (EMC) Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN 61000-3-11	2000 [2)]
IEC 61000-4-2	- [1)]	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995 [2)]
IEC 61000-4-3	- [1)]	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002 [2)]
IEC 61000-4-4	- [1)]	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995 [2)]
IEC 61000-4-11	- [1)]	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994 [2)]
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		A1	1999
A2	2002		A2	2002
CISPR 16-1	- [1)]	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-

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Matériel de soudage à l'arc –

Partie 10:
Exigences relatives à la compatibilité électromagnétique (CEM)

Arc welding equipment –

Part 10:
Electromagnetic compatibility (EMC) requirements

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ARC WELDING EQUIPMENT –

Part 10: Electromagnetic compatibility (EMC) requirements

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 International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60974-10 has been prepared by IEC technical committee 26: Electric welding.

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

FDIS	Report on voting
26/237/FDIS	26/239/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 2004. At this date, the publication will be

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

ARC WELDING EQUIPMENT –

Part 10: Electromagnetic compatibility (EMC) requirements

1 Scope and object

This part of IEC 60974 is applicable to equipment for arc welding and allied processes, including power sources and ancillary equipment, for example wire feeders, liquid cooling systems and arc striking and stabilising devices.

NOTE 1 Allied processes are, e.g., plasma cutting and arc stud welding.

NOTE 2 This standard does not specify basic safety requirements for arc welding equipment such as protection against electric shock, unsafe operation, insulation co-ordination and related dielectric tests.

Arc welding equipment type tested in accordance with, and which has met the requirements of, this standard is considered to be in compliance for all applications.

1.1 Emission

The objective of this standard is to specify

a) test methods to be used in conjunction with CISPR 11 and its amendments 1 and 2 to determine electromagnetic emissions;

b) relevant standards for harmonic current emission, voltage fluctuations and flicker.

1.2 Immunity

The objective of this standard is to define immunity requirements and test methods for continuous and transient, conducted and radiated disturbances including electrostatic discharges.

NOTE 3 These requirements do not cover extreme cases, which may occur with an extremely low probability of occurrence in any location.

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 60050-161, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

IEC 60050-851, *International Electrotechnical Vocabulary – Chapter 851: Electric welding*

IEC 60974-1, *Arc welding equipment – Part 1: Welding power sources*

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 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A*
Amendment 1 (2001)

IEC/TS 61000-3-4, *Electromagnetic compatibility (EMC) – Part 3-4: Limits – Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A*

IEC 61000-3-11, *Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subjet to conditional connection*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test*

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

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test*

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

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*
Amendment 1 (1999)
Amendment 2 [1]

CISPR 16-1, *Specification for radio disturbance and immunity measuring apparatus and method – Part 1: Radio disturbance and immunity measuring apparatus*

3 Terms and definitions

For the purposes of this part of IEC 60974, definitions related to EMC and to the relevant phenomena contained in IEC 60050-161 and in CISPR publications, definitions related to arc welding equipment contained in IEC 60050-851 and in IEC 60974-1, and the following definition apply.

3.1
idle state
the operating mode in which the power is switched on, but when the welding operation does not take place

[1] To be published.