

SLOVENSKI
STANDARD

**SIST EN 60730-
1:1997/A17:2001**

prva izdaja
februar 2001

Amendment to clauses 1, 7, 23, 26 and annex H of EN to comply with EMC

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[SIST EN 60730-1:1997/A17:2001](https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ae0edb566f22/sist-en-60730-1-1997-a17-2001)
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Referenčna številka
SIST EN 60730-1:1997/A17:2001(en)

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English version

**Automatic electrical controls for household and similar use
Part 1: General requirements**

Dispositifs de commande électrique
automatiques à usage domestique et
analogue
Partie 1: Règles générales

Automatische elektrische Regel- und
Steuergeräte für den Hausgebrauch
und ähnliche Anwendungen
Teil 1: Allgemeine Anforderungen

This amendment A17 modifies the European Standard EN 60730-1:1995; it was approved by CENELEC on 1999-10-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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

This amendment has been prepared by the CENELEC Technical Committee TC 72, Automatic controls for household use.

EN 60730-1 covers the requirements of the EMC (Electromagnetic Compatibility) Directive and the Low Voltage Directive (LVD).

For EMC, in the absence of a Part 2, the generic standards of CENELEC apply.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A17 to EN 60730-1:1995 on 1999-10-01.

This amendment replaces EN 60730-1:1995/A13:1998.

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 publication (dop) 2000-10-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2002-10-01

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The following modifications apply to the text of EN 60730-1:1995

1 Scope and normative references

1.5 Add the following normative references

EN 55014:1993, *Limits and methods of measurement of radio disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes, electric tools and similar electric apparatus*

EN 55022:1994, *Limits and methods of measurement of radio disturbance characteristics of information technology equipment*

EN 60555-2:1987, *Disturbances in supply systems caused by household appliances and similar electrical equipment -- Part 2: Harmonics*
(To be withdrawn by 2001-01-01)

EN 60555-3:1987, *Disturbances in supply systems caused by household appliances and similar electrical equipment -- Part 3: Voltage fluctuations*
(To be withdrawn by 2001-01-01)

EN 61000-3-2:1995, *Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)*

EN 61000-3-3:1995, *Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to 16 A*

CISPR 16-1:1993, *Specification for radio disturbance and immunity measuring apparatus and methods -- Part 1: Radio disturbance and immunity measuring apparatus*

7 Information

Table 7.2

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Requirement 7: **add** to the field in the column with the heading 'Clauses or subclauses' the subclause reference '23.101.1'.

[SIST EN 60730-1:1997/A17:2001](https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ac0edb566122/sist-en-60730-1-1997-a17-2001)

Add the following new item to the table:
<https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ac0edb566122/sist-en-60730-1-1997-a17-2001>

101	EMC standard/test method	X
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23 Replace the title and text by:

23 EMC requirements - emission

23.1 to 23.1.2 See Annex H.

23.101 Free standing and independently mounted controls which cycle during normal operation shall be so constructed that they do not generate excessive radio interference.

Integrated and incorporated controls are not subjected to the tests of this clause as the result of these tests can be affected by the incorporation of the control in an equipment. They may, however, be carried out on such controls if requested by the manufacturer.

Compliance is checked by one of the following methods as declared by the manufacturer (Table 7.2 Requirement 52). (See also Table H23).

1. *Testing in accordance with EN 55014, but with the value of 10 ms replaced by 20 ms in subclause 4.2.3.4, and EN 55022.*
2. *Testing as detailed in 23.101.1 and 23.101.2, resulting in a maximum duration of radio frequency emission of 20 ms. Where such controls have a click rate greater than 5, method 1 should be used.*
3. *The minimum time between contact operations during normal operation cannot be less than 10 minutes.*

23.101.1 Test conditions

Three previously untested samples are subjected to the test.

The electrical and thermal conditions are as specified in 17.2 and 17.3, except as follows:

- *The test is conducted at the lowest declared voltage and lowest declared current (Table 7.2 Requirement 108).*
- *For sensing controls the rate of change of activating quantities is α_1 and β_1 .*
- *For non-sensing controls, the controls are caused to operate at the lowest contact operating speed possible during normal operation.*
- *For controls declared for use with inductive loads, the power factor is 0,6, unless declared otherwise in Table 7.2 Requirement 7. For controls declared with purely resistive loads, the power factor is 1,0.*

23.101.2 Test procedure

[SIST EN 60730-1:1997/A17:2001
https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ae0edb566f22/sist-en-60730-1-1997-a17-2001](https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ae0edb566f22/sist-en-60730-1-1997-a17-2001)

The control is operated for 5 cycles of contact operation.

The duration of radio interference is measured by an oscilloscope, or the measuring equipment specified in CISPR 16-1 but with the capability to measure 20 ms, connected to the control so as to measure the voltage drop across the contacts.

For the purpose of this test, radio interference is any observed fluctuation of voltage across the contacts which is superimposed on the supply waveform as a result of contact operation.'

26 **Replace the title by:**

26 **EMC requirements - immunity. Operation with mains borne perturbations, magnetic and electromagnetic disturbances**

Add after the text of this clause the following note:

In general, the tests of clause H26 are not applicable to non-electronic controls because of their tolerance to such perturbations. The appropriate tests for specific types of non electronic controls may be included in other clauses of the appropriate part 2.

Annex H

Add:

H23 **EMC-requirements - emission**

H23.1 Electronic controls shall be so constructed that they do not emit excessive electric or electromagnetic disturbances in their environment.

H23.1.1 Low frequency emission, disturbances in supply systems

Controls in which an electronic device controls directly an external load connected to the mains power supply (the control port) or falling within the scope of EN 60555-2, EN 60555-3 and EN 61000-3-2 and EN 61000-3-3, shall comply with the requirements of these standards.

This does not apply to controls declared and designed for pilot duty load only.

H23.1.2 Radio frequency emission

Free standing, independently mounted and in-line cord electronic controls using software, oscillating circuits, or switching power supplies shall comply with the requirements of EN 55014 and EN 55022 as indicated in Table H23.

Additional details may be given in the relevant part 2.

The relevant part 2 will indicate whether the requirement of this clause applies to integrated and incorporated electronic controls.

H26 **Replace the title by:** [SIST EN 60730-1:1997/A17:2001](https://standards.iteh.ai/catalog/standards/sist/80612cd8-c4e1-495f-8a2e-ae0edb566f22/sist-en-60730-1-1997-a17-2001)

HD26 **EMC requirements - immunity. Operation with mains borne perturbations, magnetic and electromagnetic disturbances**

Table H23: Emission

Port	Frequency range	Limits	Test method	Notes	Remarks
Enclosure	30 - 230 MHz	30 dB(μ V/m) at 10 m	EN 55022 Class B	see note 1	The statistical evaluation in the basic standard applies
	230 - 1000 MHz	37 dB(μ V/m) at 10 m			
AC Mains	0 - 2 kHz		EN 60555-2 / EN 61000-3-2 EN 60555-3 / EN 61000-3-3	see note 2	
	0,15 - 0,5 MHz limits decrease linearity with log frequency	66-56 dB(μ V) quasi peak 56-46 dB(μ V) average			
	0,5 - 5 MHz	56 dB(μ V) quasi peak 46 dB(μ V) average			
	5 - 30 MHz	60 dB(μ V) quasi peak 50 dB(μ V) average			
Load terminals and AC mains	0,15 - 30 MHz	See reference standard EN 55014 Clause: discontinuous interference	EN 55014		The statistical evaluation in the basic standard applies

NOTE 1: Applicable only to controls containing processing devices, e.g. microprocessors operating at frequencies greater than 9 kHz.

NOTE 2: All provisions and requirements of EN 60555-2, EN 60555-3, EN 61000-3-2 and EN 61000-3-3 apply for equipment within the scope of these standards.