



SLOVENSKI STANDARD
SIST EN 60335-2-76:2005/A12:2011
01-maj-2011

Gospodinski in podobni električni aparati - Varnost - 2-76. del: Posebne zahteve za generatorje impulzov za električne ograje - Dodatek A12

Household and similar electrical appliances - Safety - Part 2-76: Particular requirements for electric fence energizers

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-76: Besondere Anforderungen für Elektrozaungeräte

Appareils électrodomestiques et analogues - Sécurité - Partie 2-76: Règles particulières pour les électrificateurs de clôtures

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Ta slovenski standard je istoveten z: EN 60335-2-76:2005/A12:2010

ICS:

65.040.10	Poslopja, naprave in oprema za živino	Livestock buildings, installations and equipment
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SIST EN 60335-2-76:2005/A12:2011 **en,fr,de**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-76/A12

September 2010

ICS 65.040.99

English version

**Household and similar electrical appliances -
Safety -
Part 2-76: Particular requirements for electric fence energizers**

Appareils électrodomestiques
et analogues - Sécurité -
Partie 2-76: Règles particulières pour
les électrificateurs de clôtures

Sicherheit elektrischer Geräte für den
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Teil 2-76: Besondere Anforderungen
für Elektrozaungeräte

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This amendment A12 modifies the European Standard EN 60335-2-76:2005; it was approved by CENELEC on 2010-09-01. 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, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

A proposal to amend EN 60335-2-76:2005 was discussed during the London meeting of CENELEC TC 61 in December 2008, when it was decided to submit a draft for an amendment to the CENELEC Enquiry.

The results were discussed at the Sofia meeting in November 2009, when it was decided to submit a revised draft to the formal vote.

The text was circulated in March 2010 and was approved by CENELEC as amendment A12 to EN 60335-2-76:2005 on 2010-09-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2011-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2013-09-01

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19 Abnormal operation

19.1 *Replace the modification by:*

19.1 *Addition:*

Energizers are also subjected to the tests of 19.101, 19.102, 19.103, 19.104 and 19.105.

Add:

Annex ZAA (normative)

Time delayed electric fence energizers

The following modifications to this standard are applicable for **time delayed electric fence energizers**.

3 Definitions

3.ZAA.1

time delayed electric fence energizer

electric fence energizer that when a very low load impedance is detected at the output terminals, has its maximum output impulses limited for the duration of the **delay time**, but permits the output impulses to rise even above the normal maximum allowed value of 5 J after the **delay time**

3.ZAA.2

delay time

time the **energizer** waits before its maximum output energy is allowed to increase in response to a changed load

3.ZAA.3

adaptation time

time by which an **energizer** output has reached steady state in response to a changed load after the **delay time** has elapsed

7 Marking and instructions

7.1 *Addition:*

The **energizer** shall be marked with the substance of the words "**time delayed electric fence energizer**" or with the symbol (see 7.6).

Compliance is checked by inspection.

7.6 *Addition:*



Time delayed electric fence energizer

7.12 Addition:

If the “**time delayed electric fence energizer**” symbol or the substance of the words “**time delayed electric fence energizer**” is marked on the appliance, its meaning shall be explained.

The instructions for **energizers** marked “**time delayed electric fence energizer**” or with the symbol shall state the **delay time** of the **energizer** using the substance of the following:

This time delayed electric fence energizer has a delay time of X seconds.

Compliance is checked by inspection.

7.14 Addition:

The diameter of the circle in the symbol for **time delayed electric fence energizer** shall be at least 15 mm.

Compliance is checked by measurement.

22 Construction**22.108 Replacement:**

22.108 The output characteristics of **time delayed electric fence energizers** shall be such that

- the **delay time** shall be between 15 s and 60 s,
- the **adaption time** shall be less than 1 min,
- the impulse repetition rate shall not exceed 1 Hz,
- the **impulse duration** of the impulse in the non inductive resistor R1 of the **standard load** shall not exceed 10 ms,
- when the impedance of the load at the output terminals exceeds 500 Ω or has exceeded it at least once within the **delay time**, the energy/impulse in the non inductive resistor R1 of the **standard load** shall not exceed 5 J,

NOTE The energy/impulse is the energy measured in the impulse over the **impulse duration**.

- when the impedance of a load X at the output terminals has stayed below 500 Ω for more than the **delay time**, the output impulse energy into X shall not exceed the steady state limits given in Table ZAA.1,

Table ZAA.1 – Maximum total steady state output impulse energy

Impedance of load X	Maximum total steady state output impulse energy
Ω	J
≤ 100	15
200	12,5
300	8,3
400	6,3
500	5

The output from the **energizer** shall not exceed the curve created by linearly joining the above points.

- when a load H with an impedance variable from 175 Ω to 1 500 Ω is placed in parallel with a load X, having an impedance below 500 Ω , after X has stayed at the output terminals for more than the **delay time**, the output impulse energy into H shall not exceed 5 J for the entire **delay time** after load H was applied.

Compliance is checked by measurement and by the following test, the **energizer** being operated under **normal operation** and supplied in accordance with 11.5:

- the **standard load**, limited to the possible range of values above 500 Ω , is connected to the output terminals and the energy/impulse measured in the non inductive resistor R1 of the **standard load** shall not exceed 5 J;
- the **standard load** is then disconnected and successive loads X of 50 Ω , 100 Ω , 200 Ω , 300 Ω and 400 Ω and one randomly selected value between 50 Ω and 500 Ω representing a fence are connected between the output terminals and maintained until the sum of the **delay time** and **adaptation time** have elapsed. Then the load X is replaced between two consecutive impulses by a 500 $\Omega \pm 1 \Omega$ load for at least one impulse, and then replaced again between two consecutive impulses by the load X. During the full period starting with the first impulse in the 500 $\Omega \pm 1 \Omega$ load and finishing after the **delay time** following the return of the load X, the energy/impulse measured into the 500 Ω load and subsequently the load X, shall not exceed 5 J;
- the loads X are again successively connected between the output terminals for a time exceeding the sum of **delay time** and **adaptation time**. The energy/impulse is continuously monitored and shall not exceed the values listed in Table ZAA.1. Then successive values of load H of 175 Ω , 300 Ω , 400 Ω , 500 Ω and 1 000 Ω , representing a body, are connected between two consecutive impulses in parallel to the load X for one additional **delay time**. Until the end of each additional **delay time**, the energy/impulse into H shall not exceed 5 J.

22.ZAA.1 Time delayed electric fence energizers with a maximum output energy exceeding 5 J under **normal operating** conditions shall incorporate the following alarm and output control function:

- If the alarm is enabled and if the impedance of the load at the output terminals of the **energizer** drops from above 1 000 Ω to below 400 Ω from one impulse to the next one and then remains below 400 Ω for more than six consecutive impulses, the alarm shall trigger and the impulse repetition rate shall decrease to less than 0,34 Hz. The alarm may stop and the normal impulse repetition rate shall recover as soon as the impedance connected to the output terminals increases above 600 Ω or when it has given alarm for at least 10 min and no more than 60 min.
- If the alarm has provision for the user to disable it and if the alarm is disabled, the **energizer** maximum energy/impulse shall not exceed 5 J limit and this shall be indicated by a visible means.
- If the **energizer** has an external visual or audible alarm and no internal alarm indication and if the external alarm is disconnected, the **energizer** maximum energy/impulse shall not exceed the normal 5 J limit and this shall be indicated by a visible means.

The alarm shall comprise both a visual and an audible indication when activated. The visual indicator shall be easily observed at a distance of 10 m from the device when placed in a typical internal laboratory setting, facing towards the observer. The audible indicator shall be tested with a measuring device having A-weighted sound pressure level (see EN 61672 series) at a distance of 1 m from the **energizer** and shall have a sound output of at least 55 dB. During these tests the **energizer** shall be in its working position complete with any outer case/cover.

Compliance is checked by connecting a 1 000 $\Omega \pm 2,5 \Omega$ resistor to the output terminals of the **energizer** for at least 1 min, and then substituting it between two consecutive impulses by a 400 $\Omega \pm 2,5 \Omega$ resistor.

Annex ZC
(normative)**Normative references to international publications
with their corresponding European publications***Addition:*

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61672	Series	Electroacoustics - Sound level meters	EN 61672	Series

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