
Gospodinjski in podobni električni aparati - Varnost - 2-76. del: Posebne zahteve za generatorje impulzov za električne ograje - Dopolnilo AA

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

oSIST prEN IEC 60335-2-76:2020/oprAA:2020

[https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-](https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-3807e60d753/osist-pr-en-iec-60335-2-76:2020/oprAA:2020)

[3807e60d753/osist-pr-en-iec-60335-2-76:2020/oprAA:2020](https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-3807e60d753/osist-pr-en-iec-60335-2-76:2020/oprAA:2020)

Ta slovenski standard je istoveten z: prEN IEC 60335-2-76:2020/prAA:2020

ICS:

65.040.10	Poslopja, naprave in oprema za živino	Livestock buildings, installations and equipment
-----------	---------------------------------------	--

oSIST prEN IEC 60335-2-76:2020/oprAA:2020

en,fr

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN IEC 60335-2-76:2020/oprAA:2020](https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020)
<https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN IEC 60335-2-76:2020
prAA

May 2020

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 Hausgebrauch und
ähnliche Zwecke - Teil 2-76: Besondere Anforderungen für
Elektrozaungeräte

This draft amendment prAA, if approved, will modify the European Standard prEN IEC 60335-2-76:2020; it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2020-07-24.

It has been drawn up by CLC/TC 61.

If this draft becomes an amendment, 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.

This draft amendment was established by CENELEC 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 CEN-CENELEC Management Centre 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2020 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Project: 70278

Ref. No. prEN IEC 60335-2-76:2020/prAA:2020 E

prEN IEC 60335-2-76:2020/prAA:2020 (E)

European foreword

This document (prEN IEC 60335-2-76:2020/prAA:2020) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

This document is currently submitted to the CENELEC Enquiry.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

With this amendment the standard EN 60335-2-76:2005+A1:2006+A2:2015+A11:2008+A12:2010 is superseded.

This amendment supplements or modifies the corresponding clauses of the standards below:

- EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019 (Part 1)
<https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2020704723/osist-pren-iec-60335-2-76-2020-opraa-2020>
- EN IEC 60335-2-76:2020 (Part 2)

Secretary Note: *the IM shall decide which part 1 shall be applicable.*

Secretary Note: *This standard shall be read in conjunction with EN IEC 60335-2-76:2020. (PR=70277)*

The numbering system for European clauses, subclauses, notes, tables, figures and annexes that are additional to those in the IEC standard are prefixed with the letter "Z".

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

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

NOTE FROM THE ISSUE MANAGERS:

*because **time delayed electric fence energizers** (which can exceed 5 J after a delay time as described in the annex ZAA of the **EN** 60335-2-76) are not specified in the **IEC** 60335-2-76 standard, the present document(s) do(es) not clearly stipulate if they are to be possible or not inside a **security energizer group**. The attention of the National Committees is drawn to the fact that if the use of a **time delayed electric fence energizers** was to be allowed inside a **security energizer group** the present document(s) would need to be completed to specify how to test for a **security energizer group** that would contain at least one **time delayed fence energizer***

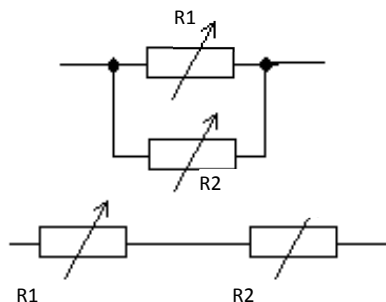
1 Modification to Clause 3, "Terms and Definitions"

3.8.101

standard load

Replace the definition as following:

load consisting of the non-inductive resistor R1 between 50 Ω and 500 Ω giving the most severe condition and a non-inductive variable resistor R2 that is adjusted so as to maximize the energy per impulse or **output current** in the non-inductive resistor R1, as applicable. The non-inductive variable resistor R2 is connected in series or parallel with the non-inductive resistor R1, whichever gives the more unfavourable result



Key

R1 non inductive resistor between 50 Ω and 500 Ω

R2 non inductive variable resistor

STANDARD PREVIEW
(standards.iteh.ai)

2 Modification to Clause 6, "Classification"

oSIST prEN IEC 60335-2-76:2020/oprAA:2020

6.101 Delete the clause <https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020>

3 Modification to Clause 7 Marking and instructions

7.1 Replacement:

In the second paragraph, replace "Energy limited energizers" by "Energizers".

7.12.1 Addition:

The installation instructions for energizers fitted with polyvinyl chloride sheathed cords shall state that the energizer has to be located in a shelter and must not be handled when the ambient temperature is below +5 °C.

4 Modification to Clause 10, "Power input and current"

10.101 Replace "energy limited energizers" by "energizers".

5 Modification to Clause 22, "Construction"

22.108 Replace third dashed item with:

- the energy/impulse in the non-inductive resistor R1 of the **standard load** shall not exceed 5 J and the peak current in the non-inductive resistor R1 of the **standard load** shall not exceed 20 A for more than 200 μ s cumulated per impulse;

Delete the fourth dashed item.

prEN IEC 60335-2-76:2020/prAA:2020 (E)

22.115 Replace the first paragraph with following:

Type S security energizer group output characteristics measured in the 500 Ω resistor R_T shall be such that

- the impulse repetition rate shall not exceed 1 Hz;
- the **impulse duration** of the impulse shall not exceed 10 ms;
- the energy/impulse shall not exceed 5 J;

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

6 Modification to Clause 32, "Radiation, toxicity and similar hazards"

Delete Figure 103

7 Modification to the Annexes

Annex A (informative)

Routine tests

A.3 Functional test

Replace the addition with following:

The **energizer** output characteristic shall be checked by operating the **energizer** at **rated voltage** with a 500 Ω load connected across the output terminals.

The **energizer** output characteristic shall be such that

- the impulse repetition rate shall not exceed 1 Hz;
- the **impulse duration** of the impulse shall not exceed 10 ms;
- the energy/impulse shall not exceed 5 J;

Add the following Annex ZAA:

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:

<https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020>

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 load at the output terminals exceeds 500 Ω , or was less than 500 Ω and then exceeds 500 Ω 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 and the peak current in the non-inductive resistor R1 of the **standard load** shall not exceed 20 A for more than 200 μ s cumulated per impulse.
- 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 Ω	Maximum total steady state output impulse energy 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 1500 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 energy/impulse into H shall not exceed 5 J and the peak current into H shall not exceed 20 A for more than 200 μ s cumulated per impulse, 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; and the peak current in the non-inductive resistor R1 of the **standard load** shall not exceed 20 A for more than 200 μ s cumulated per impulse.
- 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; and the peak current into the 500 Ω and subsequently the load X shall not exceed 20 A for more than 200 μ s cumulated per impulse.
- 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 and the peak current into H shall not exceed 20 A for more than 200 μ s cumulated per impulse.

22.ZAA.1 Time delayed electric fence energizers with a maximum output energy exceeding 5 J under test conditions according to Subclause 22.108 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 and the peak current shall not exceed 20 A for more than 200 μ s cumulated per impulse 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 5 J and the peak current shall not exceed 20 A for more than 200 μ s cumulated per impulse 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.*

Part 1 is applicable, with following addition:

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 60068-2-52	2017	Environmental testing - Part 2: Tests Test Kb Salt mist, cyclic (sodium chloride solution)	EN IEC 60068-2-52	2018
IEC 61672-1	2013	Electroacoustics - Sound level Part 1: Specifications	EN 61672-1	2013
IEC 61672-2	2017	Electroacoustics - Sound level Part 2: Specifications	EN 61672-2	2017
IEC 61672-3	2013	Electroacoustics - Sound level Part 3: Specifications	EN 61672-3	2013

Annex ZZA

(informative)

The Annex ZZA in Part 1 is not applicable.

Annex ZZB

(informative)

The Annex ZZB in Part 1 is not applicable.

prEN IEC 60335-2-76:2020/prAA:2020 (E)

8 Modification to the Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

EN 60335-2-86, *Household and similar electrical appliances – Safety – Part 2-86: Particular requirements for electric fishing machines*

EN 60335-2-87, *Household and similar electrical appliances – Safety – Part 2-87: Particular requirements for electric animal stunning equipment*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN IEC 60335-2-76:2020/oprAA:2020
https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020](https://standards.iteh.ai/catalog/standards/sist/17270890-ebc8-429b-b69a-2807cfe0d753/osist-pren-iec-60335-2-76-2020-opraa-2020)