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Irish Standard
I.S. EN IEC 62793:2020

Thunderstorm warning systems - Protection against lightning

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62793

October 2020

ICS 29.020; 91.120.40

Supersedes EN IEC 62793:2018 and all of its amendments and corrigenda (if any)

English Version

Thunderstorm warning systems - Protection against lightning (IEC 62793:2020)

Systèmes d'alerte aux orages - Protection contre la foudre (IEC 62793:2020)

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The text of document 81/640/FDIS, future edition 2 of IEC 62793, prepared by IEC/TC 81 "Lightning protection" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62793:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-07-26
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IEC 62305 (series)	NOTE	Harmonized as EN 62305 (series)
IEC 62858	NOTE	Harmonized as EN IEC 62858
IEC 61400-24	NOTE	Harmonized as EN IEC 61400-24

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62561-4	-	Lightning protection system components (LPSC) - Part 4: Requirements for conductor fasteners	EN 62561-4	-
IEC 62561-1	-	Lightning protection system components (LPSC) - Part 1: Requirements for connection components	EN 62561-1	-
IEC 60068-2-75	2014	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	2014
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 61180	-	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	-
IEC 61000-6-4	-	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments	EN IEC 61000-6-4	-

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INTERNATIONAL STANDARD

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IEC 62793:2020-09(en)

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67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

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THUNDERSTORM WARNING SYSTEMS – PROTECTION AGAINST LIGHTNING

FOREWORD

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International Standard IEC 62793 has been prepared by IEC technical committee 81: Lightning protection.

This second edition cancels and replaces the first edition, published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- portable devices are no longer covered by this standard;
- in Clause 5, classes of TWS have been deleted;
- in Clause 6, updated figures and more detailed text are provided to better illustrate the alarm timeline;
- in Clause 9, the text has been summarized and refers now to the application guide given in Annex F;
- annexes have been reorganized;
- Annex E is normative.

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The text of this International Standard is based on the following documents:

FDIS	Report on voting
81/640/FDIS	81/641/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

Natural atmospheric electric activity and, in particular, cloud-to-ground lightning poses a serious threat to living beings and properties. Every year severe injuries and deaths of humans are caused as a result of direct or indirect lightning strikes.

Lightning:

- may affect sport, cultural and political events attracting large concentrations of people, when in the open field; events may have to be suspended and people evacuated in the case of a risk of a thunderstorm;
- may affect industrial activities by creating power outages and unplanned interruptions of production processes;
- may interrupt all kinds of traffic (people, energy, information, etc.);
- has led to a steady increase in the number of accidents and losses per year due to the wider use of electronic components that are sensitive to the effects of lightning (in industry, transportation and communication);
- may be a hazard for activities with an environmental risk, for example handling of sensitive, inflammable, explosive or chemical products;
- may be a cause of fire.

During the last decades, technical systems including systems devoted to real-time monitoring of natural atmospheric electric activity and lightning, have experienced an extraordinary development. These systems can provide high quality and valuable information in real-time of the thunderstorm occurrence, making it possible to achieve information which can be extremely valuable if coordinated with a detailed plan of action.

Although this information allows the user to adopt anticipated temporary preventive measures, it should be noted that all the measures to be taken based on monitoring information are the responsibility of the system user according to the relevant regulations. The effectiveness will depend to a large extent on the risk involved and the planned decisions to be taken. This document gives an informative list of possible actions (see Annex C).

Lightning and thunderstorms, as many natural phenomena, are subject to statistical uncertainties. It is therefore not possible to achieve precise information on when and where an individual lightning will strike but statistical parameters are defined in this document to help the user in selecting proper measures.

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THUNDERSTORM WARNING SYSTEMS – PROTECTION AGAINST LIGHTNING

1 Scope

This document describes the characteristics of thunderstorm warning systems (TWSs) in order to implement lightning hazard preventive measures.

Single sensors and/or a network of sensors (e.g. lightning location system) can be used as a TWS.

This document provides requirements for sensors and networks collecting accurate data of the relevant parameters, giving real-time information on lightning and atmospheric electric activity. It describes the application of the data collected by these sensors and networks in the form of warnings and historical data.

This document includes:

- a general description of available techniques for TWSs;
- guidelines for alarming methods;
- informative examples of possible preventive actions.

The following aspects are outside the scope of this document:

a) lightning protection systems: such systems are covered by IEC 62305 (all parts) [1][1];
b) other thunderstorm related phenomena such as rain, hail, wind;
c) satellite and radar based thunderstorm detection techniques;
d) portable devices (a device where the sensor is not fixed).

NOTE It is possible that calibration and testing of portable devices will not be sufficient to provide efficient warning.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62561-4, *Lightning protection system components (LPSC) – Part 4: Requirements for conductor fasteners*

IEC 62561-1, *Lightning protection system components (LPSC) – Part 1: Requirements for connection components*

IEC 60068-2-75:2014, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

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