SVENSK STANDARD

SS-EN IEC 61757-3-2, utg 1:2022

Fastställd	Sida	Ansvarig kommitté
2022-09-21	1 (1+51)	SEK TK 86

Fiberoptiska givare – Del 3-2: Givare för akustik och vibration – Distribuerad mätning

Fibre optic sensors – Part 3-2: Acoustic sensing and vibration measurement – Distributed sensing

Som svensk standard gäller europastandarden EN IEC 61757-3-2:2022. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61757-3-2:2022.

Nationellt förord

Europastandarden EN IEC 61757-3-2:2022

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61757-3-2, First edition, 2022 - Fibre optic sensors - Part 3-2: Acoustic sensing and vibration measurement - Distributed sensing**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 33.180.99

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61757-3-2

May 2022

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English Version

Fibre optic sensors - Part 3-2: Acoustic sensing and vibration measurement - Distributed sensing (IEC 61757-3-2:2022)

Capteurs fibroniques - Partie 3-2: Détection acoustique et mesure des vibrations - Détections réparties (IEC 61757-3-2:2022)

Lichtwellenleitersensoren - Teil 3-2: Akustische Sensorik und Schwingungsmessung - Verteilte Sensorik (IEC 61757-3-2:2022)

This European Standard was approved by CENELEC on 2022-05-03. 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.

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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 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.

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

Ref. No. EN IEC 61757-3-2:2022 E

SEK Svensk Elstandard SS-EN IEC 61757-3-2, utg 1:2022

European foreword

The text of document 86C/1700/CDV, future edition 1 of IEC 61757-3-2, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61757-3-2:2022.

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)	2023-02-03
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2025-05-03

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61757-3-2:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60869-1 NOTE Harmonized as EN IEC 60869-1

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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 61757	2018	Fibre optic sensors - Generic specification	EN IEC 61757	2018
IEC 61757-2-2	2016	Fibre optic sensors - Part 2-2: Temperature measurement - Distributed sensing	EN 61757-2-2	2017

IEC 61757-3-2

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Fibre optic sensors – Part 3-2: Acoustic sensing and vibration measurement – Distributed sensing

Capteurs fibroniques – Partie 3-2: Détection acoustique et mesure des vibrations – Détections réparties

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIBRE OPTIC SENSORS –

Part 3-2: Acoustic sensing and vibration measurement – Distributed sensing

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 61757-3-2 has been prepared by subcommittee SC 86C: Fibre optic systems and active devices, of IEC technical committee TC 86: Fibre optics. It is an International Standard.

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

Draft	Report on voting
86C/1700/CDV	86C/1719/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 61757 series, published under the general title *Fibre optic sensors*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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
- amended.

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INTRODUCTION

This document is based on SEAFOM Measuring Sensor Performance Document – 02 (SEAFOM MSP-02) [1][1]. Within the framework of a type C liaison, SEAFOM proposed this document as a new work item, which was approved by the participating members of IEC SC 86C.

NOTE Except for Figure 1, Figure C.1, Figure C.2, and Figure C.3, all figures in this document were adopted from SEAFOM MSP-02 either in original or in modified form with permission from SEAFOM.

The IEC 61757 series is published with the following logic: the sub-parts are numbered as IEC 61757-M-T, where M denotes the measure and T, the technology.

1 Numbers in square brackets refer to the Bibliography.

FIBRE OPTIC SENSORS –

Part 3-2: Acoustic sensing and vibration measurement – Distributed sensing

1 Scope

This part of IEC 61757 specifies the terminology, characteristic performance parameters, related test and calculation methods, as well as specific test equipment for interrogation units used in distributed fibre optic acoustic sensing and vibration measurement systems. This document refers to the Rayleigh backscatter and phase detection method by phase-sensitive coherent optical time-domain reflectometry (ϕ-OTDR) only. Quasi-static and low frequency operation modes are not covered by this document.

Generic specifications for fibre optic sensors are defined in IEC 61757.

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 61757:2018, *Fibre optic sensors – Generic specification*

IEC 61757-2-2:2016, *Fibre optic sensors – Part 2-2: Temperature measurement – Distributed sensing*