ICS 33.180.99 SLOVENSKÁ TECHNICKÁ NORMA December 2021

STN	**Optické vláknové senzory Časť 2-1: Meranie teploty Senzory teploty založené na vláknových Braggových mriežkach**	**STN EN IEC 61757-2-1** 35 9275

Fibre optic sensors - Part 2-1: Temperature measurement - Temperature sensors based on fibre Bragg gratings

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/21

Obsahuje: EN IEC 61757-2-1:2021, IEC 61757-2-1:2021

133921

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61757-2-1

September 2021

ICS 33.180.99

English Version

Fibre optic sensors - Part 2-1: Temperature measurement - Temperature sensors based on fibre Bragg gratings (IEC 61757-2-1:2021)

Capteurs fibroniques - Partie 2-1: Mesure de la température - Capteurs de température basés sur des réseaux de Bragg à fibres
(IEC 61757-2-1:2021)

Lichtwellenleitersensoren - Teil 2-1: Temperaturmessung - Temperatursensoren auf der Basis von Faser-Bragg-Gittern
(IEC 61757-2-1:2021)

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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 61757-2-1:2021 E

European foreword

The text of document 86C/1725/FDIS, future edition 1 of IEC 61757-2-1, 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 61757-2-1:2021.

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) 2022–06–01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024–09–01

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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 60050	(series)	International Electrotechnical Vocabulary (IEV)	-	-
IEC 61757	-	Fibre optic sensors - Generic specification	EN IEC 61757	-
IEC 61757-1-1	2020	Fibre optic sensors - Part 1–1: Strain measurement - Strain sensors based on fibre Bragg gratings	EN IEC 61757-1-1	2020
ISO/IEC Guide 98-3	-	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-

IEC 61757-2-1

Edition 1.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic sensors – Part 2-1: Temperature measurement – Temperature sensors based on fibre Bragg gratings

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IEC 61757-2-1:2021-07(en-fr)

IEC 61757-2-1

Edition 1.0 2021-07

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ICS 33.180.99 ISBN 978-2-8322-1009-5

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FIBRE OPTIC SENSORS –

Part 2-1: Temperature measurement – Temperature sensors based on fibre Bragg gratings

FOREWORD

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IEC 61757-2-1 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

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

FDIS	Report on voting
86C/1725/FDIS	86C/1737/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.

INTRODUCTION

This document is based on the guideline VDI/VDE 2660 Blatt 2:2020-04, *Technical temperature measurement – Optical temperature sensor based on fibre Bragg gratings – Recommendation on temperature measurement and statement of measurement uncertainty* [1][1]. It was prepared in cooperation with VDI/VDE-GMA Technical Committee 2.17 "Fibre optic measurement techniques".

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 2-1: Temperature measurement – Temperature sensors based on fibre Bragg gratings

1 Scope

This part of IEC 61757 specifies the terminology, characteristic performance parameters and related test methods of optical temperature sensors based on fibre Bragg gratings (FBG) that carry out temperature measurements in the temperature range between –260 °C and 600 °C.

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 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at www.electropedia.org)

IEC 61757, *Fibre optic sensors – Generic specification*

IEC 61757-1-1:2020, *Fibre optic sensors – Part 1-1: Strain measurement – Strain sensors based on fibre Bragg gratings*

ISO/IEC GUIDE 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995*