SLOVENSKI STANDARD
SIST EN IEC 61757-7-3:2024

01-julij-2024

Optični senzorji - 7-3. del: Merjenje napetosti - Polarimetrijska metoda (IEC 61757-7-3:2024)

Fibre optic sensors - Part 7-3: Voltage measurement - Polarimetric method (IEC 61757-7-3:2024)

Lichtwellenleiter-Sensoren - Teil 7-3: Spannungsmessung - Polarimetrisches Verfahren (IEC 61757-7-3:2024)

Capteurs fibroniques - Partie 7-3: Mesure de tension - Méthode polarimétrique (IEC 61757-7-3:2024)

Ta slovenski standard je istoveten z: **EN IEC 61757-7-3:2024**

ICS:

33.180.99	Druga oprema za optična vlakna	Other fibre optic equipment

SIST EN IEC 61757-7-3:2024 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN IEC 61757-7-3

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English Version

Fibre optic sensors - Part 7-3: Voltage measurement - Polarimetric method (IEC 61757-7-3:2024)

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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

European foreword

The text of document 86C/1873/CDV, future edition 1 of IEC 61757-7-3, 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 61757-7-3:2024.

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) 2025-02-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2027-05-24

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The text of the International Standard IEC 61757-7-3:2024 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 61300-2-1	NOTE	Approved as EN IEC 61300-2-1
IEC 61300-2-9	NOTE	Approved as EN 61300-2-9

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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61757	-	Fibre optic sensors - Generic specification	EN IEC 61757	-

IEC 61757-7-3

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic sensors – Part 7-3: Voltage measurement – Polarimetric method

Capteurs fibroniques – Partie 7-3: Mesure de tension – Méthode polarimétrique

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIBRE OPTIC SENSORS –

Part 7-3: Voltage measurement – Polarimetric method

FOREWORD

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IEC 61757-7-3 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/1873/CDV	86C/1893/RVC

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/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, or
- revised.

INTRODUCTION

This document is part of the IEC 61757 series, which is dedicated to fibre optic sensors. Generic specifications for fibre optic sensors are defined in IEC 61757.

The individual parts of the IEC 61757 series are numbered as IEC 61757-M-T, where M denotes the measure and T the technology of the fibre optic sensor. The IEC 61757-7-T series is concerned with voltage measurements.

Voltage measuring techniques are essential for controlling and diagnosing apparatus that support industry and society. Optical voltage sensors based on electro-optic effects have been developed to serve as voltage measuring devices. These sensors enable advanced voltage measurements without encountering the issues related to conventional electrical voltage sensors. Hence, they have been applied in various fields including power systems.

Given the expected potential of this new fibre optic voltage sensing technology, several kinds of optical voltage sensors covering a wide range of applications have been developed by various manufacturers. The design of these voltage sensors depends on the specific application, which determines the target voltage to be measured, the configuration of the sensor, the signal processing method, and the installation method. When developing a new optical voltage sensor, the sensor performance and characteristics have to be specified and evaluated.

To facilitate the use of fibre optic voltage sensors, it is important to define terms that characterize the performance and functionality of these sensors. It is also important to clearly specify how these specifications can be evaluated. Clearly defined terms and evaluation procedures help to develop more efficient sensors and to smoothly transfer this new sensor technology from the suppliers to the users. This document defines a set of methods for evaluating the performance and characteristics of fibre optic voltage sensors. However, this document does not quantify any performance targets, because these depend on the specific application of the sensor. It is nevertheless expected that this document helps to define specific quantitative targets for the sensor performance when a fibre optic voltage sensor is developed for a given practical application.

This document is based on the standard OITDA FS 02 [1][1] published by the Optoelectronic Industry and Technology Development Association (OITDA). All the figures and tables in this document are identical to those in OITDA FS 02 except for the translation from Japanese to English.

[1] Numbers in square brackets refer to the Bibliography.